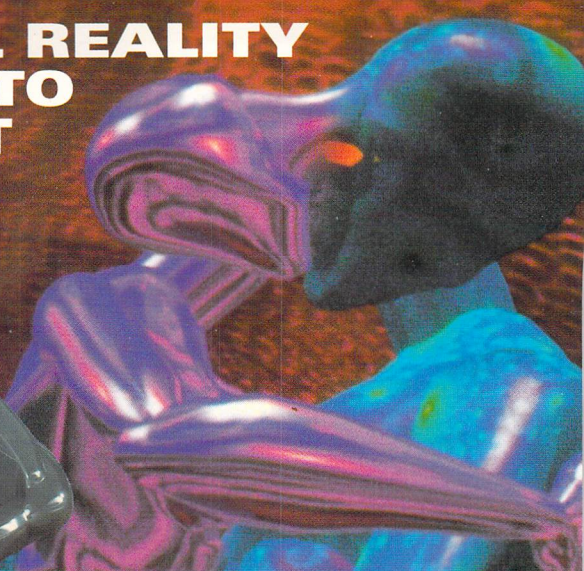


ST FORMAT

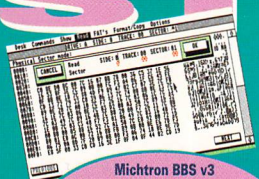
VIRTUAL REALITY
COMES TO
YOUR ST



42
COVER
DISK 2

ST KNIFE FORMAT ST

Knife ST is the best disk editor you can get for your ST. It can salvage lost files, unerase data, repair disks, edit data, study memory locations and generally prow around inside the mind of your ST



Michtron BBS v3 is the best bulletin board software you can get, that's why we use it for the ST FORMAT BBS. Now you can use it too

ALL PROGRAMS STE AND TOS 2.06 COMPATIBLE

Games, games and more games - here are 50 to crown them all!

PLAY THE BEST!

42
COVER
DISK 1

ST FORMAT

OZONE

it's cute,
it's got platforms,
it's got power ups,
it's brilliant



DOWNFALL

Cunning two player
snow-'em up

SPACE WAR

The best version of
the classic game, ever

FRACTAL ENGINE

Loads of wacky Fractals

IMPROVISER

Demo of the musical
improvisation program

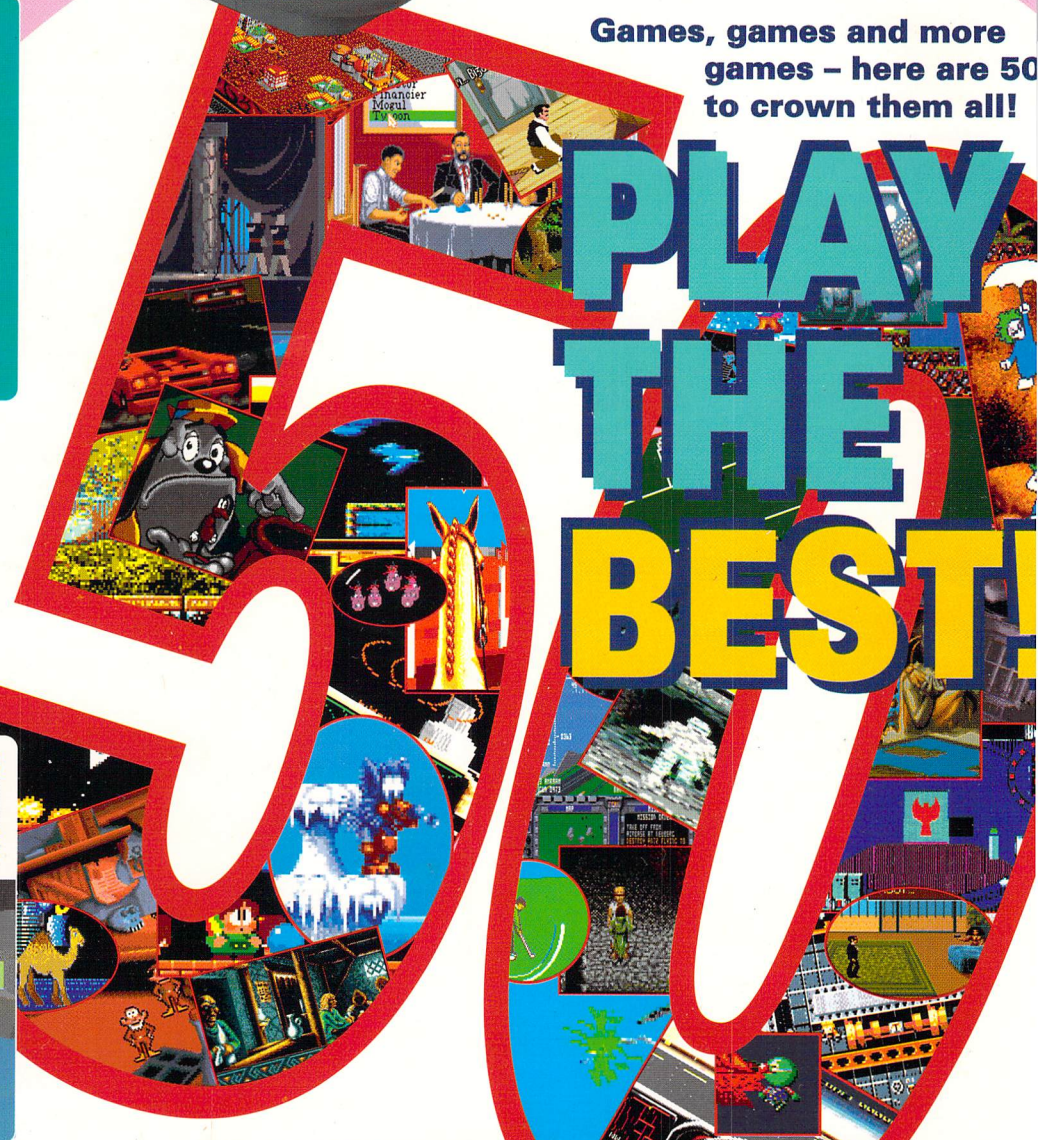
RUBRICK

Screen saver

THE LAST

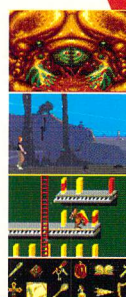
ARCADIAN

Fantastic 3D
flight-sim blast



NO COVER DISKS?
THEN ASK YOUR NEWSAGENT FOR THEM IMMEDIATELY

**THAT WAS
THE YEAR
THAT WAS**
Take a look
back at the
ST's past
12 months



WHAT'S NEW?
Find out in
our 25 page
reviews
section



ON DISK: Knife ST - The very best disk and memory editor you can get for your ST
INCLUDED THIS MONTH: Over 40 games!
Ideomaster, the Deskjet 550C **PLUS!**

PLUS! Protext and Write On head to head, Archer Maclean rants, STOS extensions, ST FORMAT's Bulletin Board - and much more!

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of value



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Watch out for our regular software updates with many exciting new features, available only to registered users

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New Blitz Turbo

- Back-up your disks at lightning speed
- Copies from the internal to the external drive
- Cleverly by-passes your ST's disk controller chip
- Back-up an ST disk in around 40 seconds
- Now you can switch between your disk drive and Blitz Turbo without disconnecting your Blitz interface

New Blitz Turbo£25
Original Blitz Turbo£15

Floppy Drives

PC720B



- Award winning drive manufactured by Power Computing
- Super slim design
- Virus blocker (prevents viruses)
- Built-in Blitz Turbo
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- High quality
- 12 month warranty

PC720B£65

PC720I

- Atari internal disk drive£39.95

PC7200I

- Official Atari internal disk drive£45
(No case cutting but must be small button version)

PC720P

- Disk drive inc. power supply unit£50

Drive Accessories

Maxell Multi-Colour disks (10)£9.95
Floppy disks bulk supplied£POA

Boot from Drive B

If you have an internal drive that is not compatible with "Boot from drive B" this cable will solve your problem£9.95

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- Super slim design
- Low profile mechanism
- No need for a cooling fan
- Buffered thru'port
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- High speed 20ms seek rate
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- Power supply
- ICD interface and utility disk

Series 900 40MB£329
Series 900 100MB£479

Add £10 for clock to be fitted to Series 900 hard disk

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When you purchase this hard drive you can buy Lattice C v5 for£60

ICD

The Link™

- External SCSI host adaptor
- Connect Atari ST to external SCSI devices e.g. External HD, floppy drives, Optical drives, CD ROM drives which were originally designed for the Apple Mac, IBM PC, Commodore Amiga, NeXT Atari TT, Falcon
- Atari ST must have a DMA port
- Plug-in and go
- Software included
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- Manufactured by Power Computing
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- High power cooling fan
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- SCSI ID switch

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Proflight£29
Harlekin£45
Werks£24
Knife ST£29
PC Ditto£29
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10 Maxell disks, Optical mouse, Zipstick£45

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and next day delivery

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Swift 24e	£279
-----------------	------

(includes colour kit and AMI)

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- Print speed of 6ppm
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- Ideal upgrade from dot-matrix

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EPL 4300

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- 1MB memory
- Expand to 6MB
- Adobe postscript option
- 100 sheet tray

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EPL 8100

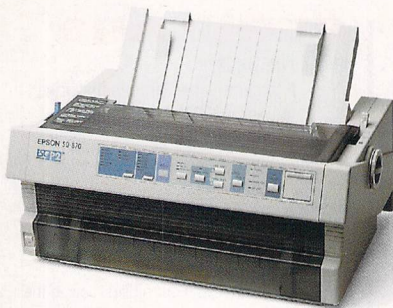


- Prints speed of 10ppm
- 1MB memory expandable to 6MB
- Microsoft printing
- Ritech
- 27 font
- 250 sheet papertray
- Adobe postscript option
- Intelligent/remote emulation switching
- Parallel/serial interface
- Networking capabilities
- Can serve 2-3 users
- Shared printing

EPL 8100	£1349
----------------	-------

Inkjet

SQ870



- New generation inkjet
- Advanced paper handling
- Print scalable fonts
- 660cps print speed
- 360 x 360 DPI print quality
- 128k printer buffer
- Handles four paper types

SQ870	£509
SQ1170	£629

(132 Column printer)

Dot Matrix

LQ570

- Four feed paths
- Flexible paper management
- 225cps print speed
- Easy access control panel
- Memory stores around 4 full pages of text
- Print text and graphics
- Optional sheet feeders
- Optional tractor feeder

LQ570	£289
LQ1070	£449

(132 column printer)

LQ100



- 24-pin
- 250 cps printspeed
- Space saving
- Scalable fonts
- Enhanced graphics
- 50 sheet A4 paper tray
- Dual position design
- Optional tractor feed
- LQ100 fits in anywhere!

LQ100	£209
-------------	------

Dot Matrix Cont.

LX100

- 9 pin
- Tractor feed
- Cut sheet feeder
- Cables
- Some of the LQ100 features

LX100	£189
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Monitor

Philips CM8833 MK2

- With cable
- On-site maintenance

CM8833 MK2	£199
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The Ultimate Cartridge

The Ultimate Cartridge will break into any Atari ST program. Whether you're a programmer, hacker, games player, or just curious about your Atari ST, The Ultimate Cartridge gives you the power that you need. Updates available with new software.

Features:

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- Search memory
- Print memory
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- Disassemble to disk
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- Search for sprites
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- Set up colour palettes
- Alter plane configurations
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- Run external TOS programs
- Load TOS programs
- Load and save graphic screens
- Low level disk editor
- Disk analyser
- Examine formats
- Format analyser
- File editor
- Directory editor
- Formatter
- Break and restart function
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- Play music
- Load and save music
- Search for soundtracker music
- Search for sound samples

The cartridge the ST has been waiting for

The Ultimate Cartridge	£25
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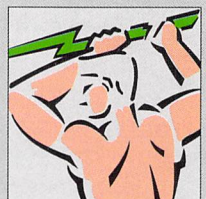
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 and (though we hate to cast aspersions) spelling.

compo time!
 three games! Think of a replacement for this month's spine-
 relating it to this month's 50 Best Games feature and you could
 come games and see your name in this bit of the mag. Send
 ideas to the editorial address above by Friday 8 January 1993.

ses est ubi Serbia fuit" (spine-line STF 40) was correctly
 fied by Michael Irish of Welwyn Garden City as meaning "Now
 fields are where Serbia once was" and also spotted that we
 fied the quote from Ovid's line about war in his work *Heroides*.

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 Find out how to make the most of these stunning programs.
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REGULARS

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- 24 COVER DISK**
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- 37 FEEDBACK**
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 1993 just wouldn't be the same without us, would it? Miss us and miss out.
- 68 MICRODEAL OFFER**
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- 99 NEXT MONTH**
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- 128 SPECIAL OFFERS**
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- 136 LIFE, THE UNIVERSE AND EVERYTHING**
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 Find out what we spent the month leering over.

WHAT
DO YOU
THINK
ARE THE
GREATEST
ST GAMES
OF ALL
TIME?

HELP!

- 49 HELP!**
 We can help you out if you need us. Or you could help us - find out how here.
- 49 GAMEBUSTERS**
 If you're too lazy or impatient to try and finish games, call

Ghostbusters. Sorry, *Gamebusters*. Page 49.

- 60 ST ANSWERS**
 More of your questions and our experts replies. This month includes *GFA Basic*, *STOS*, assembly, music and MIDI - and more!

REVIEWS

We look at over 40 games!

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80 SCREENPLAY

Loads of games this month:

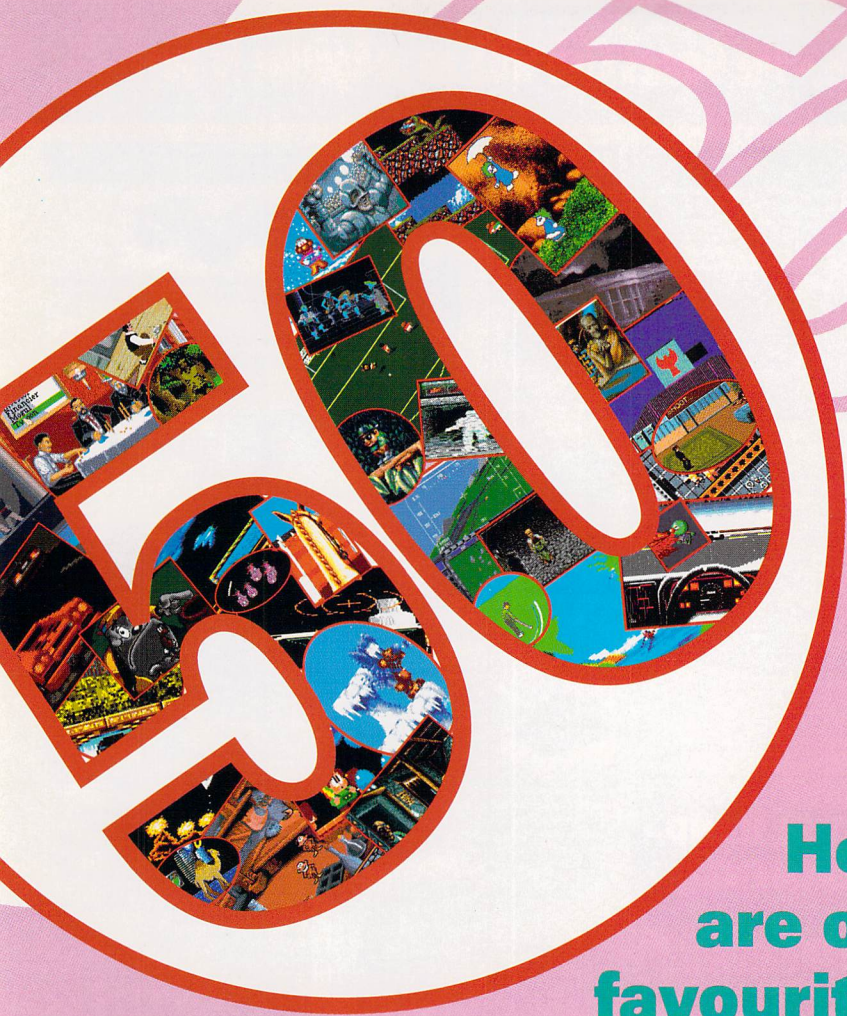
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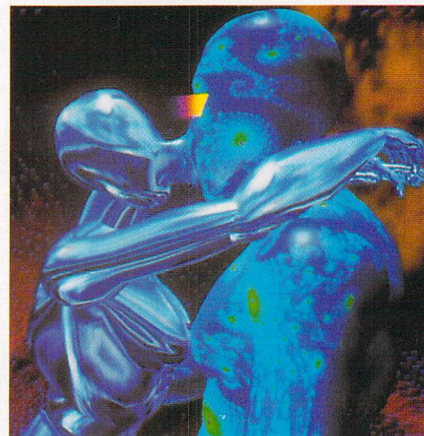
COMING
TO A SCREEN
NEAR YOU



Here
are our
favourites -
50 of 'em!
Turn to
page 16

HOW SOON WILL YOUR
ST SEE VIRTUAL REALITY?

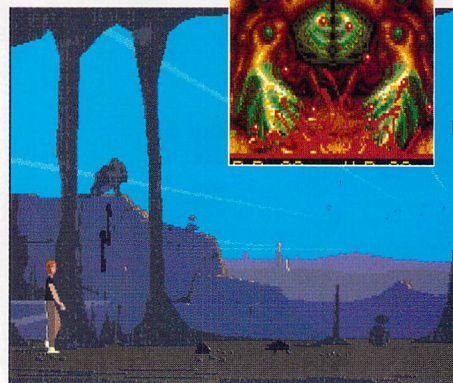
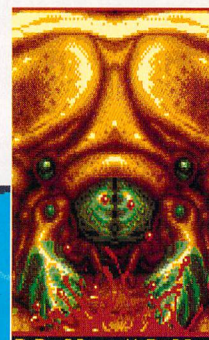
Find out on **page 42**



THAT WAS THE YEAR
THAT WAS

How well do
you remember
1993?

page 134

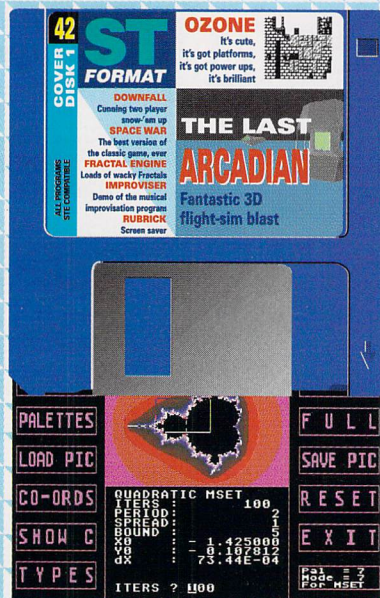


WIN!

three more games

Turn to page 116 where you'll find news of the ST FORMAT Special Edition. Go and buy it, then identify all the games featured in the introductory games pages (pages 12 and 13). Tell us at the editorial address (left) by **Friday 5 February 1993**.

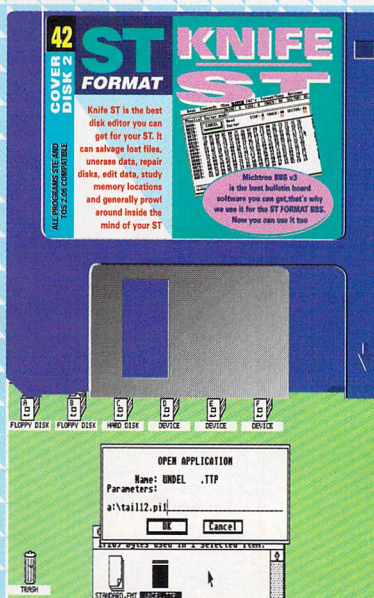
IN THE FIRST PLACE



Wow! This is a brilliant Cover Disk that we've got for you this month, including a whole four games - there's the *FORMAT* Gold winning *Ozone*, a Christmas-flavoured snow-pile creator, the *Last Arcadian* which is a great flight sim, not to mention *Space War* - so there's plenty to keep you going. If you still want more - well, we've got it with the excellent *Fractal Engine*, a demo of *Improvisor* and an interesting screen saver...

■ Make beautiful fractals with *Fractal Engine*.

AND THEN THERE'S THIS...



Secondly, we're giving you *Knife ST* - the most comprehensive disk and memory editor you can get for your ST. It enables you to recover deleted files, repair damaged disks, alter and edit files - even in a RAMdisk! Also we've got *Michtron BBS v3* so you can start up your very own bulletin board - it's so good it's the one we use for the *ST FORMAT* BBS!

■ *Knife ST* is a comprehensive disk editor - and it's yours!

TURN TO PAGE 24 NOW!

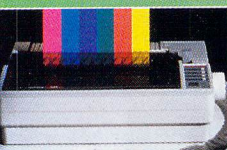
Over 120,000 people have joined Special Reserve - the Games Club with no obligation to buy.

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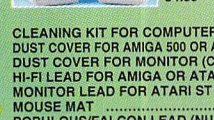


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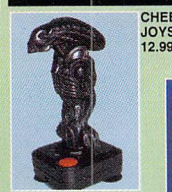
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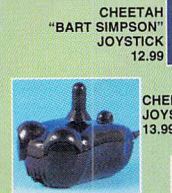
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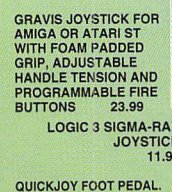
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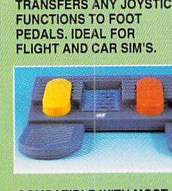
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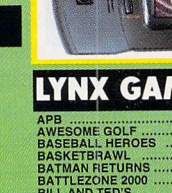
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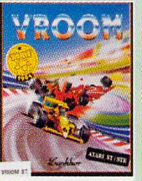
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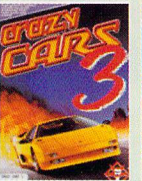
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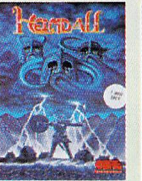
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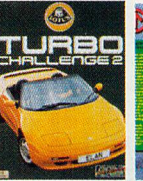
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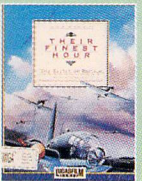
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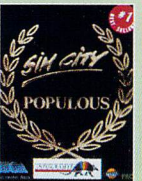
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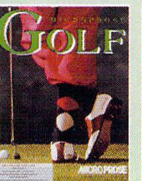
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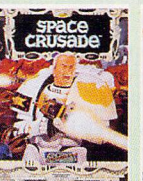
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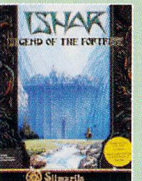
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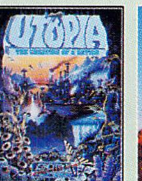
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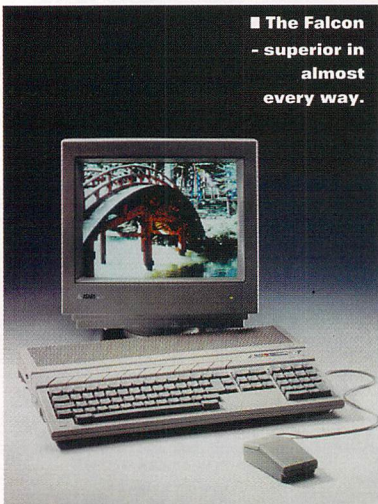
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FALCON030 VS

BY **CLIVE PARKER**

■ The Falcon
- superior in
almost
every way.



Amiga aficionados have been crowding over the release of the new Amiga A1200 games machine ahead of the Falcon030, claiming that the

capabilities of the new Commodore machine outstrip that of the Falcon. Well, sorry, but the technical specs of the 1200 don't match up to those of the Falcon - just take a look at the figures in the box in the table on the far right.

The main claim to fame for the Amiga A1200 is its high resolution HAM (Hold And Modify) mode capable of displaying 256,000 colours on-screen from a palette of 16.7 million colours. Unfortunately only static screens can be displayed in this mode, and HAM has always been susceptible to flickering. The Falcon uses eight bits to store the data for each pixel giving a true 8-bit per pixel graphic mode and can display true colour (65,536 colours on-screen) animations at resolutions of up to 640 x 400 pixels using interlace mode.

The A1200 in HAM mode takes up to three pixels to change from one colour to another while the Falcon can change colour using a single pixel offering a higher effective resolution, and, although the A1200 offers a greater palette,

it can only use up to eight bit-planes compared to the 16 bit-planes available on the Falcon. All this means is that the A1200 can display a still image at a greater resolution and with more colours, and that's all.

It has been alleged that the Falcon030 does not use "proper"

MultiTOS is a full pre-emptive multi-tasking system with adaptive prioritisation

multi-tasking, and that MultiTOS is a "bodge" job - that is, when one operation is being performed, other operations cease. MultiTOS is a full pre-emptive multi-tasking operating system with adaptive prioritisation with inter-process com-

munication through MultiTOS. This means that you can run two different programs in separate windows and both can run at the same time; while you work on the program in the top window the program in the bottom window continues to process data. There may be brief halts while both applications try to access the same peripheral at the same time, but the communication between the programs gives one priority over the other preventing any software crashes.

The Falcon is provided with an FPU co-processor slot for a 68881 or 68882 maths co-processor, the A1200 has to have its FPU installed at the factory. The main processor in the A1200 is a Motorola EC68020 running at 14MHz, while the chip has embedded internal 32-bit buses, it only has an external 24-bit address bus and built-in instruction cache. The EC68020 is normally restricted to clock speeds of 16 and 25MHz, so why did Commodore use only 14MHz to run their machine? The Motorola 68030 has full 32-bit internal and external addressing

DALEK ATTACK



■ Dalek Attack is an improvement on the original series - the special effects look good and the acting is far less wooden.

Just when you thought you could hang up your floppy hat and scarf forever, the Daleks launch a surprise attack and cause you to spill tea down your best cardigan.

Dalek Attack is a scrolling platform shoot-'em-up on Alternative Software's mid-price Admiral label. It features Davros, the Daleks' leader, who's trying to destroy the earth's ozone layer with the aid of his metal cronies.

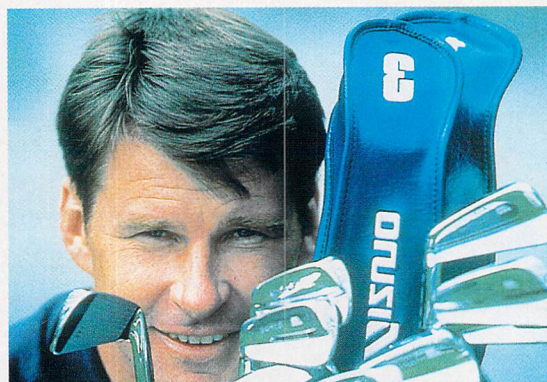
As Doctor Who, you have to foil Davros's evil plans and do battle with a variety of baddies including the Ogrons and the Robomen. Luckily, you have some help in the shape of an assistant - Ace or a UNIT soldier - and K9, the endearing metal dog.

The game costs £16.99 and is released at the end of November so that it conveniently ties in with Dr Who's 29th anniversary.

■ Doctor Who: "Do you know Doctor in the TARDIS?" Music-loving Dalek: "Sing it and you get exterminated."



NICK FALDO'S CHAMPIONSHIP GOLF



■ "Hey, what's the matter with you? Why are you squinting, Nick?" "I've just got a birdie shot in the eye."

Can Nick Faldo successfully make the transition from putting on the green to putting on the ST? Well, you're about to find out. Nick Faldo is the latest release from Grand Slam and looks set to put other golfing sims in the shade.

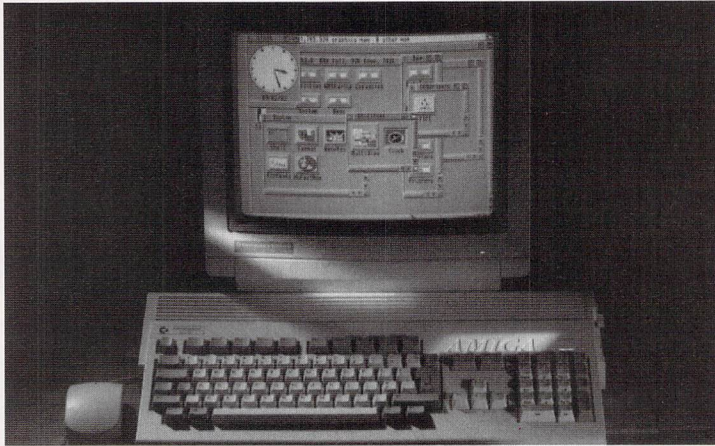
Officially endorsed by the man himself, this golf game features a section based on Faldo's training videos, so you can practise your swing and putting technique. There are two full courses included in the game with more to

follow on data disks. Up to eight human players can take part and there's even a modem link so two players can play from a distance at the same time.

As you play your way around the course you have to cope with various weather conditions and your caddy gives you help and advice on the best clubs to use and how well you're playing.

Nick Faldo's Championship Golf is to be released in mid-December and costs £29.99.

AMIGA 1200



■ The Amiga 1200 games machine doesn't really deserve a place in an ST magazine, but hey - it's no competition for the Falcon, so why worry?

along with both instruction and data caches, thus increasing the processing speed of the chip.

The Falcon runs at 16MHz making it faster than the A1200 and later versions are likely to run even faster - perhaps at 25 or 33MHz. The Motorola 68030 can run at clock speeds of 16, 20, 25, 33, 40 and 50MHz. If you combine these features with the fact that the DSP

chip can process information at high speeds (16MIPS at 32KHz), 16-bit stereo sampling, 256 times oversampling from the CODEC sound processing chip and standard connections to SCSI devices and CD-ROMs, it is plain to see that the Falcon is technically the superior machine. Unfortunately, Atari's marketing skills are another matter entirely, however.

COMPO'S COMDEX LAUNCHES

Compo have just launched a fast PC 286 emulator board for the Falcon030 at the Comdex show in Las Vegas. The board plugs into the internal expansion bus slots of the Falcon and is fully compatible with both the internal IDE hard drive and external SCSI hard drives. It is also supplied with a special screen driver for Microsoft Windows v3 which enables Windows to take full advantage of the Falcon's screen modes. No price for the 286 emulator board has been announced as yet and it seems likely that a 386 or 486 version of the board is presently being developed.

Another Falcon-only program is *Musicom*, a combined sampling, direct-to-hard drive recording and sound processing package which uses the Motorola 56001 DSP chip for processing. It can take input directly from the stereo microphone port and can sample it at frequencies of up to 49.2KHz in 8-bit mono, 8-bit stereo and 16-bit

stereo and record it directly to the hard drive. Rather than being classified as a pure direct-to-disk recording system, the program can also act as a real-time sound effects processor.

All the usual sampling effects are included in the software, along with a harmoniser effect and karaoke mode. The harmoniser can take a vocal and duplicate it at half an octave above and below the original sample, making a solo voice sound like a group of three. Karaoke mode removes the voice part of a sample from recordings to leave just the music. Best of all, the effects can act on the input in real-time, outputting the sound plus the effects as they are input, making *Musicom* a true sound processor.

Another innovation that's part of this program is an on-screen graphics equaliser with ten sliders for each of the stereo channels. Combine all this with the new 3D interface that Compo is building into all its Falcon products makes

THE FACTS!

FEATURE	A1200	FALCON
CPU	EC68020	68030
Clock Speed	14.32MHz	16MHz
MIPS	2.5	3.84
Multi-tasking	Yes	Yes
FPU coprocessor socket?	No	Yes
Instruction cache	256 bytes	256 bytes
Data cache	No	256 bytes
MMU?	No	Yes
Max Internal RAM	6MBytes	14MBytes
Max Video RAM	2MBytes	14MBytes
ROM	512K	512K
Complete boot from ROM?	No, disk required	Yes
Expansion slot	PCMCIA slot	DSP, Internal Bus Expansion
16-bit true colour	No	Yes
True 8-bit per pixel graphics mode	No	Yes
Graphics Blitter	Yes	Yes
Independent pixel-defining in maximum colour modes?	No	Yes
Custom graphics chips	Yes	No
Max resolution	1280 x 400	640 x 480
Palette	256,000 from 16.7m	32,768 from 262,144
Optional hard drive	Yes	Yes
Internal floppy drive	880K	1.44MByte
Stereo audio	8-bit	16-bit
Playback channels	4	8 + PSO (3 additional)
Record channels	No	16-bit stereo
Digital Signal Processor	No	Motorola 56K series
SCSI2 port	No	Yes
DSP/DMA audio port	No	Yes
MIDI ports	No	Yes
Local Area Network (LAN)	No	Yes

this a very interesting package. The expected price of *Musicom* is around £50 and it is expected to be available as soon as the Falcon starts selling.

Also announced by Compo at Comdex is the English version of *That's Address 2*, a powerful address database that you can use either as a program or Desk Accessory and can produce dialling touch-tones to call a number on both Falcons and STs. The pro-

gram creates a card-based address book and you can customise it to suit yourself - all field names and lengths can be configured just as you want them. *That's Address 2* is fully compatible with *Write On* and other Compo software, enabling data to be moved between programs. No price has been announced although Compo have said it will be "affordable."

Compo can be contacted on ☎ 0480 891819.

IBM PC screen shots

**The Future
Entertainment
Show**

THE FUTURE STARTS HERE

BY ROB MEAD



■ People gathered in front of the video wall to watch the heats of the National Computer Game Challenge.

Thousands of people had to be turned away from the Future Entertainment Show, the world's biggest leisure computer exhibition.

So many people tried to get into the four day event at Earl's Court that on the Saturday the ticket office had to be closed and London's local radio stations broadcasted emergency messages telling people to stay away. Despite this, the show was a resounding success with over 55,000 visitors coming to see some of the biggest names in the games software industry displaying their

wares. There were major exhibition stands from Ocean, Psygnosis, Sega, Nintendo, Virgin Retail, Commodore and a Radio One roadshow. You could try your hand at Virtual Reality, have a go on many of the softies' new games and even ride in a flight simulator. On the Electronic Arts' stand you could take part in the *Road Rash* competition astride powerful motorbikes, while the Aston Martin used by James Bond in *The Living Daylights* was on display with Domark's exhibits.

One of the show's highlights was the National Computer Game Challenge finals. Heats were held over each of the four days with the grand final taking place on the Sunday. The competition was intense and crowds of people gathered in front of the video wall to see the contestants battle their way through UBI Soft's *Pro Tennis Tour* and *Lemmings 2* among others. The £10,000 prize money was finally awarded to 17 year old Allan Brett from Nottingham, who confessed to playing his machine for up to eight hours a day. "My parents get a bit annoyed with the amount of time I spend playing,

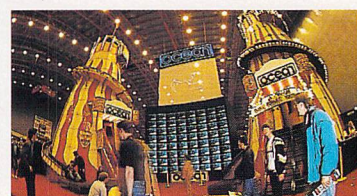
but I guess they may change their minds when they see the cheque." Runner-up Tony Eaton, a 27 year old gas board engineer, won £4,000 – he had previously beaten Allan in the West Midland playoffs.

On display in the Retail exhibition, an eagle-eyed *ST FORMAT* hack spotted a solitary Falcon running a *Videomaster* demo on the Microdeal stand. Atari failed to stage an appearance at the show, so Commodore staged another marketing coup with brisk sales of the new Amiga 1200.

After the exhibition was over, the computer leisure industry declared the Future Entertainment Show a resounding success. Mark Hayes, Director of Marketing for



■ Allan Brett (left) and Tony Eaton, finalists in the National Computer Game Challenge, collect their cheques from Andy Crane of ITV's *Bad Influence*.



■ Ocean software were offering free helter-skelter rides to anyone foolhardy enough to dare try it.

Bandai declared "Reaction from the public was overwhelming... It reflects the extraordinary boom the industry continues to enjoy even in recessionary times." Meanwhile, a dumbstruck six year old from Cheshire, Sarah Johnson, summed up her experience at the show by simply saying "Wow, wow, wow."

Because the show proved so popular, it is moving to Grand Hall Olympia for its next bash in November 1993. Holding the exhibition at Olympia enables Future Publishing – the people who bring you *ST FORMAT* each month – to cater for even more exhibitors. If this year's show was anything to go by, the 1993 Future Entertainment Show is going to be very spectacular indeed.

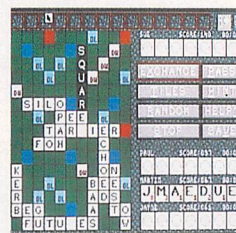
SCRABBLE

Scrabble has leapt into the 21st Century with the release of US Gold's version of the game. Just think, no more sticking your hand in a bag to pull out the letters, or dropping tiles down the back of the settee. Rather a pity really. On this

ST version, up to four players can take part and there are over 12 levels of difficulty – Level One features 2,400 words, while Level 12 has nearly 135,000.

There are practice and competitive play modes and you can

ask your ST's advice before you make your next move. At least you know that, with this version, there aren't going to be any arguments over the correct words, because *Scrabble*'s built-in dictionary can sort it out for you. *Scrabble* is available from the beginning of January, priced at £27.99.



■ No stranger to the triple word score, JMAEDUE cheats by including his name.

SHORTIES...

V.32 upgrades

Supra are giving away a free ROM upgrade for their Supra Fax Modem V.32 and V.32bis for all registered customers. The new ROMs enhance the operation of the modems and incorporate new features such as ECM (Error Correction Mode) for fax transmission and a silent answer mode which detects incoming fax calls and intercepts them; if a voice call is detected the modem ignores it. To order your upgrade contact Supra via CompuServe (Go Supra), contact the Supra BBS on ☎ 0101 503 967 2444 or write to ROM Upgrade, Supra Corporation, 7101 Supra Drive SW, Albany, OR 97321.

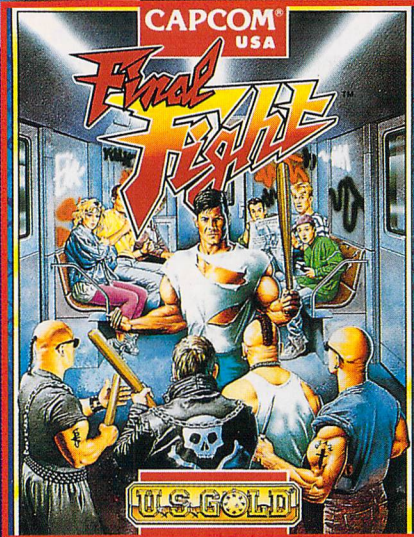
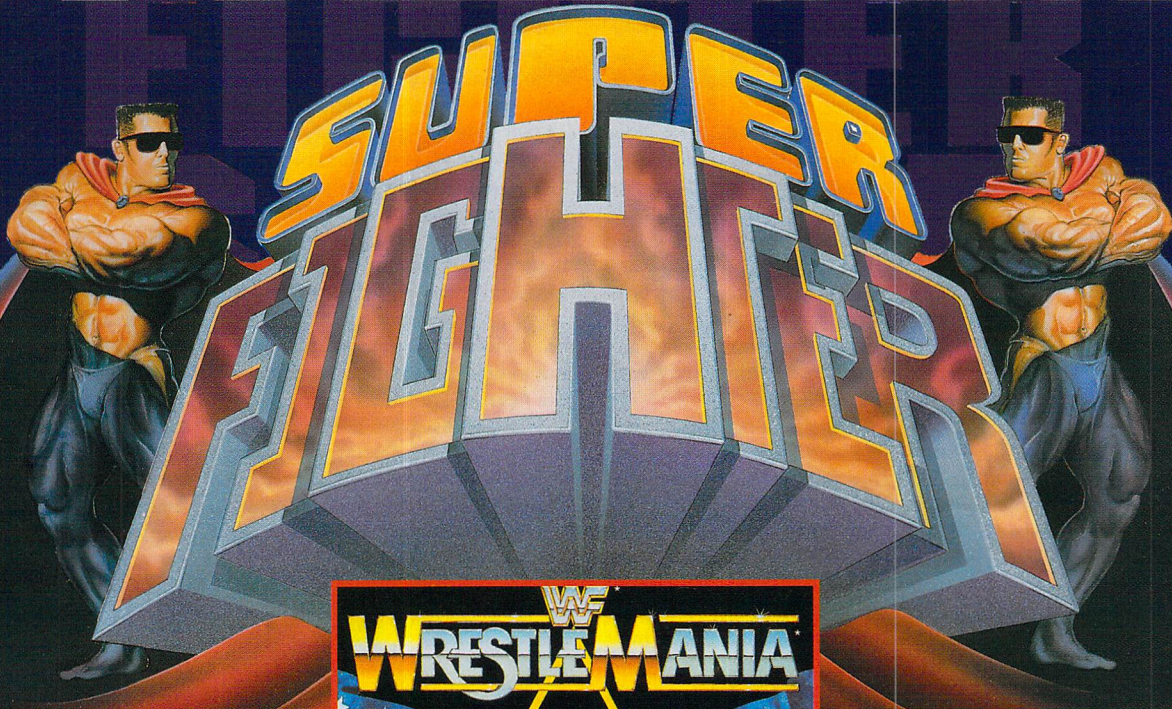
Clip here

Over 50 disks of professional clip-art are now available for the ST from Kuma covering such varied subjects as transport, caricatures, cartoons, religion and music. Clip-art is ideal for importing into documents you've created with DTP programs to brighten up the page. The Goldmind collections of disks are £19.95 each and the Kuma Klip disks cost £15 each. Demo disks are available at £3.50 for the Goldmind disk and £5 for a 76 page catalogue and three demo disks containing details of the Kuma Klip range. Contact Kuma on ☎ 0734 844335 for more information.

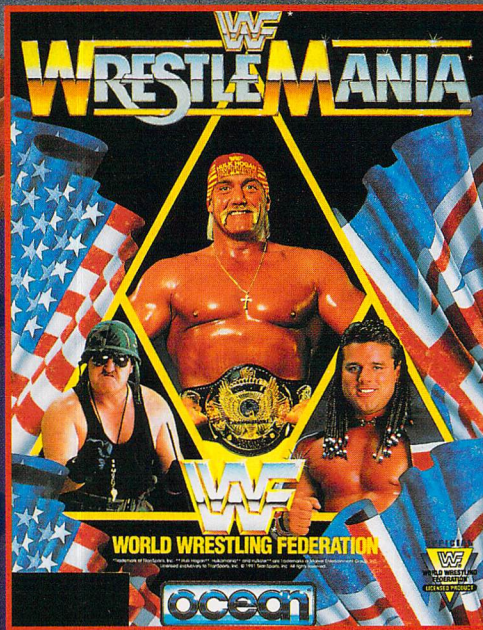
Pirates beware

FAST are cracking down on pirated software being sold at car boot sales in a link up with Trading Standards officers. FAST can now seize software which infringes copyright without a warrant and are also setting up a nationwide database to track down the professional pirate rings. With up to ten complaints a week related to pirate software and car boot sales, the problem seems to be on the increase with business software becoming the main target alongside games. Contact FAST (the Federation Against Software Theft) on ☎ 0628 660377 if you think you have been ripped off.

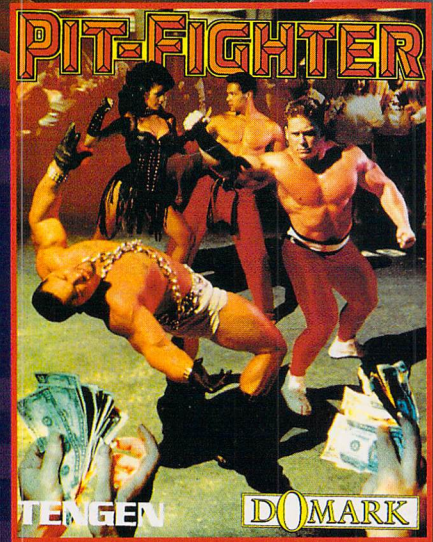
THE HARD-HITTING BIG THREE JOIN FORCES TO BRING YOU
**THE WILDEST
 COMPILATION PACK
 OF ALL TIME**



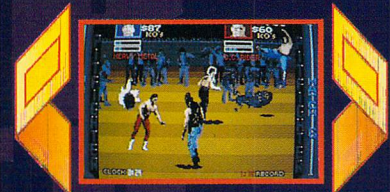
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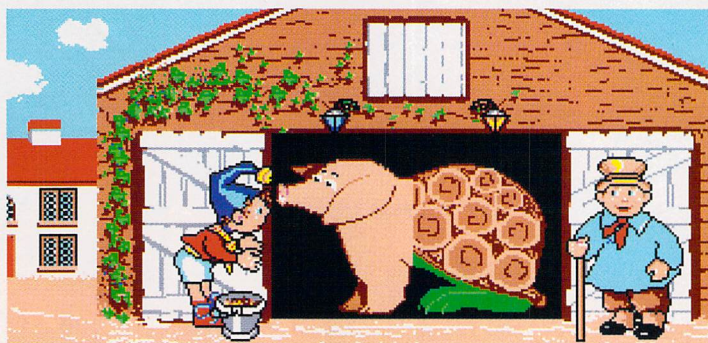


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**CBM AMIGA · ATARI ST
 SPECTRUM · AMSTRAD
 COMMODORE 64**

NODDY'S PLAYTIME



■ "Oi! What are you doing to my livestock? Get of of moi laand!"

If you've always fancied career-ing around Toytown in a red and yellow car, then now's your chance. *Noddy's Playtime* is an entertainment and education package aimed at three to seven year olds, but what's the betting you end up playing it, too?

You get to drive around three levels with Noddy, interact with his pals and take part in lots of puzzles and activities such as memory games at the railway station and animal matching at the farmyard. The package is mouse-

driven, so there's no need to worry about little fingers prodding the delete button on your ST. Also included is a junior electronic art package, a Toytown map and a comprehensive manual for teachers or parents.

Noddy's Playtime is available now from Jumping Bean, priced £24.99. Watch out for the forthcoming BBC series and the Noddy car and video machines appearing outside shops and pubs around the country. This may be your last chance to relive your childhood.

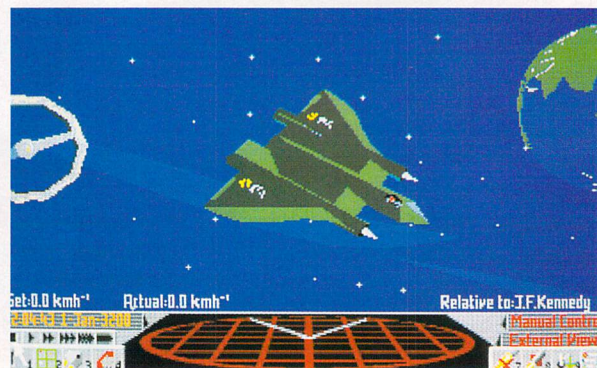
FRONTIER: ELITE 2

At last it's here! The long-awaited sequel to *Elite*, the classic space adventure, is to be released by Konami at the end of January. The scenario is the same as the original game – you're still the pilot of a small spaceship wending its way across the galaxy but you now have the choice of following either an arcade adventure or a role-playing game. In the arcade section you can either start off as a pirate or as a gunner on a battle-cruiser, so you get involved in plenty of shoot-'em-up action as you tackle increasingly complex missions. In the later stages you have to cooperate with friendly forces, so you have to be discriminating about who you fire at. Your ultimate aim is to receive your own ship from the pirates' leader and so join the main game.

If you like to spend months playing a game, then the role-playing section could be for you.

This time around, the trading aspects of the original game merely serve as a background to the main plot. Instead, you're sent on a series of mini-adventures chosen from a bulletin board – some of these activities are illegal and you could end up running the gauntlet of the authorities, or being pursued by powerful enemies. The aim of this section is open-ended and the outcome depends on the scenarios you choose.

Elite 2 follows the familiar 3D and bitmap graphics of the original and the game environment features over 100 worlds based on the mathematical probabilities of planet formation. Space travel in *Elite 2* now follows the fly-by-wire method and features the ability to travel thousands of times faster than real-time, so there's no need to leap into hyperspace every time you want to get somewhere fast.



■ "Did you see that plane fly past then?"
"Yeah, those RAF trainees are always over-shooting the runway."

MAKING MUSIC

On this month's Cover Disk you can find a demo of *Improvvisor*, an "interactive improvisation editor" – if you enjoy playing around with that you'll be

pleased to know that you can get hold of the full program for £49.95 – that's a saving of almost £50 from the standard price. Contact Creative Sounds on ☎ 0272 244395.

MANSELL'S WHEEL OF FORTUNE



■ "Oh yes, here we're looking at the cockpit of Nigel's latest supercharged indie racer. Because it's an American car it comes equipped with its own colour TV, burger dispenser and cola machine." "Have you noticed how much stability the flanged wheel nuts give to the racing position." "Eh?"

Nigel Mansell has recently signed an endorsement deal with computer accessory company, Logic 3. The world racing champion has lent his name to Freewheel, a steering wheel controller, which is available from January for £29.99.

The Freewheel simply plugs into your ST's joystick port and can be used in conjunction with a set of footpedals, price £24.99, to make all those racing sims far more realistic. You can get in touch with Spectravideo on ☎ 081 902 2211.

...BUT SWEETIES

Write On manual

If you want to get the best out of *Write On* then you need *A Practical Guide to Write On On The Atari ST*, a helpful new book costing just a fiver. It also covers versions of *That's Write* up to 1.52 and explains practically everything you need to know about both programs in an easy to follow way.

All money raised from the sale of the book goes to supply funds for The William de Ferrers School to help with the purchase of a desktop publishing system. If you would like a copy of the book, send a cheque for £5 to Terry Freedman, The William de Ferrers School, Trinity Square, South Woodham Ferrers, Essex CM3 5JU. Please make cheques payable to The William de Ferrers School

(ECC). We gave you *Write On* on Cover Disk 33, if you don't have a copy of it then turn to page 58 to order a back issue.

The big screen

Titan Designs have reduced the price of the Reflex Graphics Card by £50 to £199. The card increases the resolution of any of the Atari high resolution monitors to 1024 x 960 pixels enabling more information to be visible on-screen. By comparison, the maximum SVGA resolution on a PC is only 1024 x 768 pixels.

In addition to increasing the resolution of Atari monitors, the card can be also be used with multi-sync, A4 portrait and large screen monitors with

resolutions of 800 x 1024 pixels on a Qume 15 inch A4 monitor (in A4 mode) and 1024 x 870 on a Hitachi 21 inch A3 monitor.

The card can be installed in both Mega STs and standard STEs (with an adaptor costing £25 extra) and is also compatible with the Spectre GCR and AT Speed emulators. Titan can supply the Qume A4 with the Reflex card for £648, Hitachi A3 with Reflex card for £995 and the 520 STE with Reflex card fitted for just £399. Contact Titan Designs on ☎ 021 415 4155.

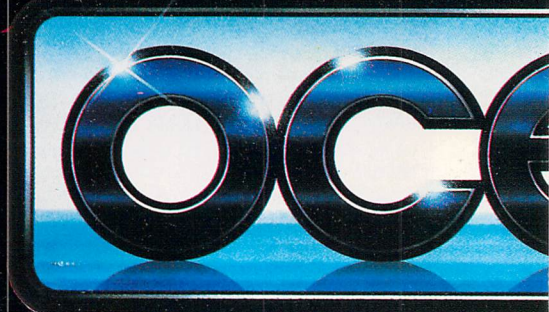
Titan are also rumoured to be working on a true colour hardware project for the Falcon030, perhaps this will be the first major add-on for the new machine? Wait and see...

THE SUPER STARS RETURN



EUROPEAN RAMPAGE

TOUR



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as they travel across Europe to square off in
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Test your strength and skill.
Work with your team-mate to achieve
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ATARI ST . AMIGA
IBM PC & COMPATIBLES
COMMODORE 64

You know what they say - the game is not lost until it's won. Something like that, anyway. No, we don't know what it means either. It just seemed like a vaguely relevant introduction to the 50 finest ST games of all time. So far. What we're saying is that if you own an ST and you enjoy playing games, then you could do a lot worse than this bunch. You're bound to disagree with the choice, of course. But that's the point. Healthy debate and all that. Just get hold of them and play 'em to death. They really do deserve it. Andy Lowe clears his throat and opens the gold envelope...

DON'T DREAM IT, PLAY IT



PARASOL STARS OCEAN

The third in the *Bubble Bobble* lineage - *Rainbow Islands* being the missing link. As sweet and sickly as tipping a bag of sugar down your throat. Cute and varied, teeming with power-ups and bonuses, and featuring terrific

cartoon-quality graphics and a stunner of a two-player mode. Boring platform games have never felt so good - perhaps because you've never been able to pretend your umbrella is a lethal weapon before.

Rated 91% in STF 37



FLOOD ELECTRONIC ARTS

Platform games have always been at their best when they're also at their cutest. *Flood* delivered brilliantly on that front by presenting us with a scuba-diving mini-dinosaur. The bizarre

idea of the game is to collect trash before the screen is completely flooded with water.

It's extremely playable and utterly sickly, which does tend to make for a rather devastating combination.

Rated 87% in STF 13

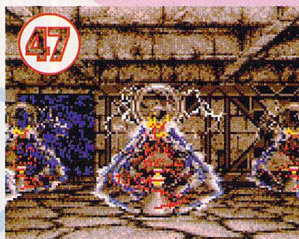


GODS RENEGADE

Not, as you may have thought, one of the god games. *Gods* is a platform-'em-up with wonderful graphics, astounding title music and a decent smattering of deft, pixel-perfect jumping and bash-

ing - all cleverly balanced with some lethal power-ups and brain-addling puzzles. Being a Bitmap Brothers game, it's characteristically slick and playable. *Psygnosis' Ork* is a similar, but inferior, concept.

Rated 92% in STF 22



CAPTIVE MINDSCAPE

Yes - the first RPG makes an appearance. Inspired by the illustrious *Dungeon Master*, this one ignores the dusty old dungeons and leaps straight into the smoothly polished future, where you're banged up in a cryogeni-

cally controlled space-prison. A neatly designed icon control-system makes this one of the first examples of the slightly tweaked RPG system. It works brilliantly - and we still get letters about it two years after its release.

Rated 93% in STF 16



BARBARIAN US GOLD

One of the most famous two-player games ever. This is the original beat-'em-up and it's as good today as it was five years ago. High points include some brilliant samples and moments of extreme gore. If you manage

to slice your opponent's head off it rolls to the ground with a satisfying thud and a goblin strolls onto the screen, kicks the head off like a football and drags the supine player off by his feet. Simple and enduring.

Rated 65% in STF 25



**WIN
THREE GAMES!**
TURN NOW TO THE
CONTENTS PAGE FOR
DETAILS!

REVENGE OF THE MUTANT CAMELS LLAMASOFT



This is written by Jeff Minter – an incredibly silly man with a gloriously original sense of the bizarre. You play a camel and you have to trot over a landscape shooting walking sticks, telephones, Atari logos and other pulsating psychedelic objects. It's great fun and it has the ability to convince your mother that ST games are seriously bad for your mind. Excellent.

Rated 95% in STF 31

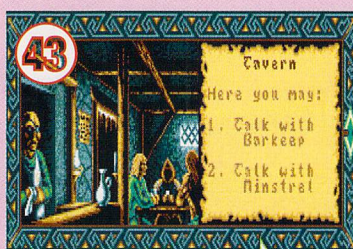
SILENT SERVICE 2 NOVAGEN



Admittedly this isn't the most action-packed game that's ever been released, but despite that it's certainly one of the most absorbing. With an awesome array of options both in the kind of submarine you control and in the war arena you battle in, this game has got a seriously heavy duty shelf life. Its appeal is enduring and its quality constant.

Rated 88% in STF 30

LEGEND MINDSCAPE



RPG number two and a darned good one it is. *Legend* has it all: weird, wibbly names, bands of brave – and stupid – adventurers, complicated spell-making procedures and a rather complex plot. Nifty isometric views mingle with 3D business – and you're not going to get anywhere in it unless you dedicate a few weeks of your life to it. Brilliantly designed. Love it.

Rated 89% in STF 36

ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS



DOMARK

Coin-op conversions are usually crap, but this is one of the best. The original was a bloody bizarre isometric shoot-'em-up with satisfying sci-fi overtones and a strange little sub-game where you had to drive a truncated tube train down a maze of passages. The ST version retains it all and still manages to be a playable game. Really. Trust me.

Rated 80% in STF 10

RAILROAD TYCOON MICROPROSE



Strategy games are, indeed, strange beasts. Either you love 'em or, er, you despise 'em. Here you have to build up your very own railway empire. It's complex stuff, and strangely compelling as you try to lay down tracks on sensible areas, stimulate supply and demand, juggle the finances and avoid the overpriced bacon-burgers and tepid coffee.

Rated 93% in STF 28

THE KILLING GAME SHOW PSYGNOSIS



The *Running Man* and *Smash TV* without the film licence or shooting-'em-up. The game achieves a good balance between console-like action and puzzle aspects. There's a slight fly in the ointment, in the shape of a lethal liquid which slowly rises up from the bottom of the screen. So – hang around and you get smothered by it – losing a life in the process.

Rated 90% in STF 23

RICK DANGEROUS 2 MICROPROSE



More platforming around with Rick – the intrepid adventurer whose first pixel-oriented excursion saw him, er, performing rather similar stunts to those executed here. But this is better. Much better – the further you progress, the more you want to. One or two random elements are likely to upset the purists, but it's definitely one of the finest jump-'em-ups ever.

Rated 86% in STF 15

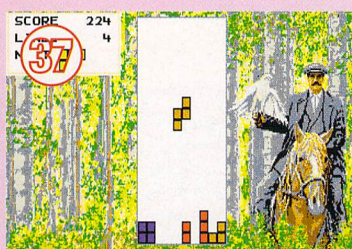
THE IMMORTAL ELECTRONIC ARTS



This is one of those rare games that breaks down the genre barriers. On one level it's an adventure game, while on another it's an arcade game. With brilliant animation and a teasing plot, there's plenty to hold your interest. You have to save a wizard but you're lucky if you can save your own life from worms, spiders and traps that are littered around the levels.

Rated 87% in STF 16

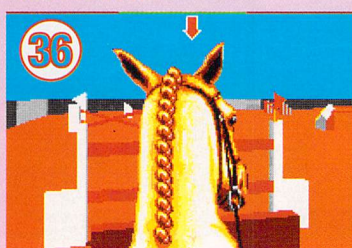
TETRIS INFOGRAMMES



Invented by a Russian scholar after a round of alcohol-induced staring at the shapes of the tiles on his bathroom floor. Another of the true classics – converted on to almost every micro and console imaginable – *Tetris* is an incredibly complex concept. You have to fit different shapes together as effectively as possible. Brilliant. It'll keep you up at night, believe me.

Rated 69% in STF 24

INTERNATIONAL SPORTS CHALLENGE EMPIRE



One of those criminally under-rated games that, for the sheer originality of its events and presentation deserved a rating well into the 80s. It easily competes with the console sports sims and it keeps the strategy element toned down, but just in focus enough to keep it realistic as opposed to irritating. Sounds good, eh? The diving's still a bitch, though.

Rated 83% in STF 38

CRUISE FOR A CORPSE
US GOLD

Probably the finest graphics ever to grace your ST even if it's a bit slow – the cinematic feel is, however, astonishing and, if you've ever fancied yourself as a bit of a Poirot, then this is the game to tune up your deductive skills. The map of the boat is essential and the animation incredible.

Rated 76% in STF 29

UTOPIA
GREMLIN

If *Populous* was a bit too plotless for you – this one, with an excellent sci-fi scenario and futuristic feel could have *Space 1999* fans scribbling cheques to the mail-order companies. You might find, of course, that your green ideals are a tad unrealistic – but have a go. Not as easy as you think, is it?

Rated 90% in STF 29

GOBLIINS
DIGITAL INTEGRATION

Utterly silly and bizarre puzzles, giving you the feeling that you're taking part in some kind of surreal cartoon. French games tend to be either utterly crap or extremely original and gripping – *Goblins* is the latter. It may be a howler of a typographical error, but what a game it is.

Rated 87% in STF 36

ANOTHER WORLD
US GOLD

More French weirdness. A scientist gets catapulted into a parallel dimension because a particle-acceleration experiment went spectacularly wrong. As you do. Cue some ground-breaking animation and one of the few games that could, conceivably, be made into a film. Sort of a surreal *THX 1138*.

Rated 93% in STF 33

SPEEDBALL 2
MIRRORSOFT

A bone-crunchingly brilliant attempt at a sports game set in a more violent future. If you haven't got it, and you want it – you're stuffed. Yes – you'll remember that Mr Maxwell took it upon himself to fall into the sea, dragging Mirrorsoft with him. Call Renegade on 071 481 9214. It's worth it.

Rated 88% in STF 18

EPIC
OCEAN

A 3D space shoot-'em-up, the main problem is that it's as easy as you want it to be because there's a cheat included in the manual to give you full weaponry, but then you don't have to use it. Commonly believed to have been overhyped. There's a large gap in your games collection without this.

Rated 91% in STF 37

DEFENDER 2
ARC

"Hello, I'm Jeff Minter. Every other Shareware programmer hates me and I wrote this when I was prepared to deal with the capitalist software houses." Yes. OK, Jeff. If you want a shoot-'em-up to fry your brain and have you bashing your ST in frustration, look at this. A wonderful game.

Rated 88% in STF 18

SIM CITY
INFOGRAMMES

In this god game you get to nurture your own city; group together the low-cost houses and create a ghetto. Lay down some spaghetti-like railway tracks and cause delays. Set the tax rates too high, then say it's not your fault when everyone starts to move out. See, it's just like real life, isn't it?

Rated 92% in STF 12

ISHAR - LEGEND OF THE
FORTRESS DAZE

Set off with a band of unruly companions and eject the evil dark lord Krogh from his fortress. Without a shadow of a doubt the finest RPG ever to run in high resolution mode on your ST. And it's French. See, regardless of what *The Sun* says, it's not all black coffee, croissants and onions out there.

Rated 90% in STF 37

FIRE AND ICE
RENEGADE

A touch over-rated, but still a playable game – and it's more than platforms and power-ups. Deliciously attractive graphics give it a cutesy appeal, while the soul-destroyingly difficult game-play puts it firmly in that "Grrr. I'm going to complete this *!@&% game if it's the last thing I do!" league.

Rated 95% in STF 38

ER, WE'LL LET YOU KNOW

Those game scenarios we tenuously picked from the software house evaluation managers' bins...

1 BACTERIA. You control a cute little patch of fungus in a variety of different colours depending on the nature of the – er, manure it has had lavished upon it by passing animals. The idea of the game is to nurture it with rotting food and other putrid substances until it's old and pestilent enough to look after itself. Lots of pointing and clicking on "Multiply" and "Spread disease" icons.

2 SILLY SUICIDE. A role-playing game. You're a depressed student living in a cold and damp bedsit with a special sort of black mould growing on the walls. The debts are mounting up, your fascist bank will only give you an £8,000 overdraft and your landlord charges £75 a week. You drink lots of cheap cider, pretend to be getting loads of girls and not go to lectures. To complete the game you must kill yourself.

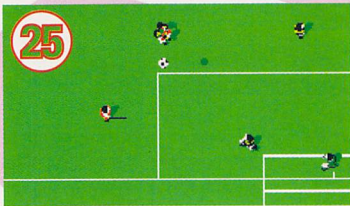
3 IN THE LAND OF ZXXPKNDJ. An ancient old man steps forth, telling a stark and harrow-

ing tale of a distant land now wracked by a foul and raging evil. Your task is to find the ten pieces of the Sceptre Of Hhtyrpx and use its awesome energy to stop messing with these clichéd RPG scenarios and get out a bit more.

4 TEDIUM. Another role playing game. You're a local newspaper journalist whose sole job is to write those awful captions for the photographs of two hideously ugly people dressed in ridiculous and impractical clothes leering falsely into the camera – otherwise known as wedding photos. And, er, that's it. Cheat!... Enter

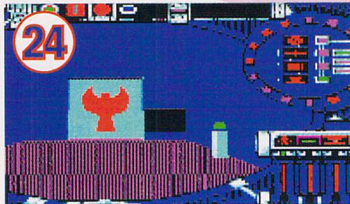
the phrase "Happy smiles from Bet Ridley and Graham Travis of Banalsville, Insipid, as they tie the knot outside an embarrassingly unpicturesque registry office" – and you complete the game, vowing never to marry.

5 PLASMANETRONICAL. Shoot things. Then, after some numbers appear on-screen and take an annoying amount of time to add themselves to your score, shoot some more things. Stare into the distance. Vaguely wonder what the hell the name of the game is supposed to mean and whether you can be bothered to care.

KICK OFF 2
ANCO

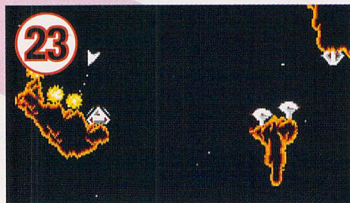
This is the game that inspired the superior *Sensible Soccer* and which dared to suggest that football wasn't all Jimmy "Bloody" Greaves and Ian "Git" St John woffling away on a Saturday afternoon – yes, you could enjoy playing it. Hear yourself shouting "Oh-hhh" and "Ye-ees" a lot.

Rated 92% in STF 14

CYBERCON 3
US GOLD

Have you seen that film, *Complex*? It was a made-for-TV thing about a high tech building controlled by a super-intelligent computer which goes haywire and decides that it wants the place to itself. *Cybercon 3* has a similar plot. Only it's much better. And it's in 3D. And it's an ST game, not a film.

Rated 91% in STF 22

OWS
PUBLIC DOMAIN

This one's so old that only Chris Lloyd, our Disk Editor, remembers it: "It's a very simple idea, but it has a lot of addictive qualities. A bit like *Tetris*, really. Only it's a different game. It's brilliant." That's the great thing about Chris – you can rely on him to make a difficult point a bit more mysterious.

Rated 75%

LURE OF THE TEMPTRESS
VIRGIN

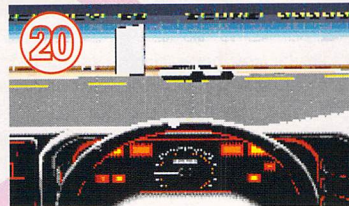
Here's a bit more pointing and clicking. To say that this game is inspired by *Monkey Island* is to say that *Bread* is crap. Yes, that much is obvious, OK? Look, it's got great graphics, a bit of humour and plenty of satisfying character interaction – and it was inspired by *Monkey Island*, OK?

Rated 92% in STF 35

MICROPROSE GOLF
MICROPROSE

The idea here is that you can play a good, realistic game of golf without having to wear stupid trousers. It's the best version of the game ever. The STF team once saw Bruce Forsyth at the local golf course in Bath. Andy even shouted "Good game, good game!" at him. But he ignored him.

Rated 95% in STF 27

ROBOCOP 3
OCEAN

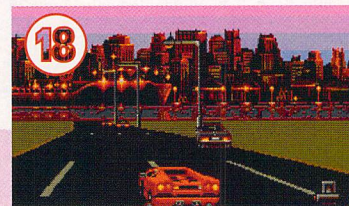
From *Epic* programmers, DID, a filled-3D extravaganza – to use a technical term – with plenty of gratuitous violence and, thankfully – for a film licence, plenty of variety in the gameplay. There's nothing else to say about it really except that it's simply a brilliant film licence. OK?

Rated 94% in STF 34

THEIR FINEST HOUR - THE BATTLE OF BRITAIN**LUCASFILM/US GOLD**

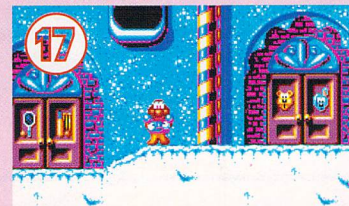
Lots of different options and a finely tuned WW2 atmosphere. A flight sim with a cause and a purpose. Another of Chris Lloyd's favourite games: "I think that this game was a major contribution to me only getting a 'D' in my Art 'A' level." Cheers, Chris.

Rated 91% in STF 15

CRAZY CARS 3
TITUS

Crazy Cars 3 is effortlessly the finest driving game available on the ST so far. It takes the genre all the way and back again with some unobtrusive strategy and gambling elements, plenty of all-weather scenarios, fast and smooth action and some serious car add-ons. Buy buy buy.

Rated 85% in STF 39

JAMES POND 2 - OPERATION ROBOCOD**MILLENNIUM**

Millennium have noticed that a good, solid, dependable and cute character is a fine way of keeping the customers interested, as they follow James Pond's daring exploits in a far superior follow-up. An oddball little game that plays like a dream.

Rated 86% in STF 31

MAGIC POCKETS
RENEGADE

Magic Pockets is a slightly dated, but still wonderfully playable platform game with some trendy Betty Boop samples. You play this geezer called the Bitmap Kid who has managed to get lost in his own pockets and so, amid all the tatty receipts from Boots and bits of fluff, he has to escape.

Rated 90% in STF 27

SACK THE PROGRAMMERS!

Some games just didn't cut it, did they? They looked like badly designed Sixth form Computer Studies projects written in BASIC, with millions of GOTOs and the occasional "For without Next" error. So, in an affectionate homage to those who tried – and failed, we present the five games which achieved the lowest ever ratings in ST FORMAT. If you own any of them, well, at least you've got a spare potential blank disk

5 The "Oh, God please save me – it's a strategy game. Suddenly that weeding, that washing up, that inside-the-car-cleaning looks distinctly enticing" award for pure tedium goes to... *Legend Of The Lost* from those people at Impressions.

Rated 22% in STF 17

4 The "Dearie me, what a sad and terrible mess" award for a dull and completely uninspiring *Operation Wolf* clone is gladly palmed off on... *Wildlife* – from them at New Deal Productions.

Rated 21% in STF 14

3 The "Sod this, I'm getting bored at trying to be innovative and original, why don't we have a have a go at sports sims?" award for a pretty dodgy first attempt goes to... the game *Warp* from the boys at Grandslam.

Rated 20% in STF 7

2 The "Erm, excuse me, sorry to interrupt you, but, er what the hell is going on here? I can't be bothered to decipher all this" award for outstanding services to dullness... is in the shape of *Starwreck* from Castlesoft.

Rated 15% in STF 7

1 But in the final analysis, these games are all well, perhaps not really that bad in comparison to that prize turkey, that stained, repulsive and horrifyingly crusty kitchen surface of a game... This is the "Game equivalent of that horrible yellow and brown cardigan you received from your auntie on your 14th birthday and had to pretend you liked it, that it was the height of fashion and even had to call her and thank her for it" award for absolute and undiluted awfulness is ungraciously flung in the direction of...

Prosoccer 2190 from, er, Vulture

Rated 12% in STF 17

PUSHOVER OCEAN



Never before has an ST game featured an ant as the major character. So, *Pushover* is a first before it's even started. We think. It's a puzzle game in which you have to plod around shifting loads of blocks and arrange them so that, when you push them, they all fall over in a sort of "domino effect." It's an unusual and strangely addictive game, and, at the end, you have to pour boiling water over the main character to kill him. Crazy.

Rated 91% in STF 39

R-TYPE ACTIVISION



A classic space shoot-'em-up, in the *Defender* mould. You get to blast the hell out of an assortment of alien baddies, picking up plenty of power-ups and special weapons en route. This is the kind of game you can play for hours and hours and still not get bored. 100% addictive with tasty graphics and fast scrolling action, this game is well deserving of its place in the top 50. In retrospect, the original rating seems a little on the low side.

Rated 79% in STF 31

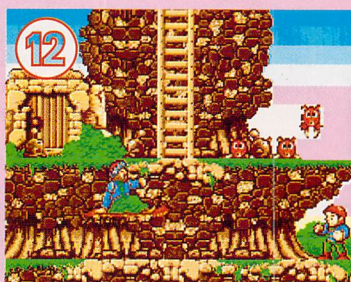
OPERATION STEALTH US GOLD



Ed Ricketts, Games Editor of times past but who still sits around the corner, once described this game as "a cross between James Bond role playing and *F-19 Stealth Fighter*." But then, he's completely and utterly insane. He's also dead right. You're a secret agent on the trail of a stolen Stealth Fighter. Sounds about right to me. Outstanding graphics and some very handy, if not exactly ubiquitous, pointing and clicking.

Rated 93% in STF 15

ELF OCEAN



A platform game with plenty of hidden depths and some of the finest ST graphics you're ever likely to witness. You're an elf – surprise surprise – who has to rescue his elf-ess. Nothing too original there. But it's the visual appeal – the whole thing's bursting with colour, and it all moves incredibly smoothly – and the arcade-quality action that keeps you going. Certainly one of Ocean's direct hits, even if it is a bit on the tough side.

Rated 89% in STF 29

MIDWINTER 2 - FLAMES OF FREEDOM

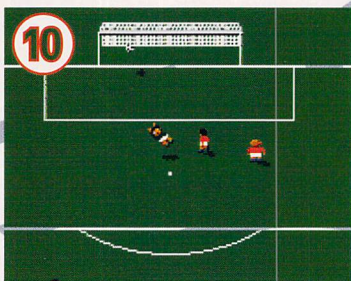


MICROPROSE

Designed by that Mike Singleton fellow who is responsible for some of the greatest 8-bit RPGs like *Lords Of Midnight* – it introduced a new-found slickness and accessible complexity to the basic point-and-click interface, with a clever mix of action and strategy. It could, however, be a bit of a mystery if you don't own the original *Midwinter*. Both games are well worth digging out.

Rated 92% in STF 26

SENSIBLE SOCCER RENEGADE



Let's face it, whoever invented football knew exactly what they were doing. In much the same way that, whoever thought of turning it into a game on your ST knew what they were doing. There are millions of 'em – football supporters and ST footy simulations, and this is, undoubtedly, the best football game you could ever wish to encounter. Play it with a mate. You might lose a friend, but the game's great fun.

Rated 91% in STF 39

SIMPLY THE BEST

And so, we reach the dizzy heights of the Top Three ST games ever. Bar none. Unanimously voted in by our "experts." In fact, to prove that we haven't fiddled it, here's the voting system in full...

ANDY HUTCHINSON - To all... "Will you stop playing *The Secret Of Monkey Island* and do some *&!!\$ work?"

ANDY LOWE - Overheard message to a telephoning reader's plea for help... "Bugger off, I'm playing *Llamatron*."

ED RICKETTS - Spoken to a mate down the pub... "Cor. That *Lemmings* is a bit of all right, isn't it?"

So, there you have it...

3 LEMMINGS PSYGNOSIS



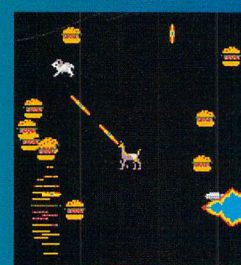
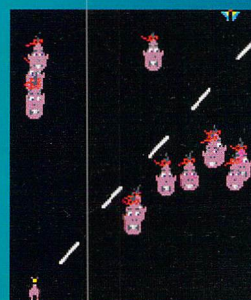
Better known as "that bloody game." Designed by some of the most sadistic and perverted minds in the history of programming, *Lemmings* works on two levels. You can try to save the lemmings, or you can get them all out into the open, double-click on the "nuke" icon and then snigger hysterically at the brutal pyrotechnics as they all explode – which isn't very productive, but it's pretty funny. You're supposed to go for the former option and guide all the cute little creatures to their home – which is usually right on the other side of some seemingly impassable iceberg or steel works. The game is so addictive and infuriating that DMA Design, the programmers, have actually received death threats from irate players who can't get past the last level. Yeah – that was a lie, too. Still, it almost had you convinced for a second there, didn't it?

Rated 94% in STF 24

2 LLAMATRON LLAMASOFT

Minter's masterpiece. A cocky and determined two-fingered salute to those who think that a good game constitutes £24.99's worth of film licence and pretty graphics – and very little else.

Lust after this game, it is immeasurably wonderful on almost every count. Silly and surreal graphics, incredible sampled sound, frantic and merciless game action and that indefinable Minter hallmark which so many have strived for but no one has equalled. Llamas are captivatingly



strange-looking creatures and this game pays comical homage to their downright weirdness and even manages to turn them into some kind of sci-fi wonder beasts. What's more, it's Shareware. It only costs you a fiver. Exceptional.

Rated 95% in STF 31

F-19 STEALTH FIGHTER MICROPROSE



96%? Well, that's a bit high, isn't it? Yes. Probably. But, since we're now firmly into the Top Ten, *F-19 Stealth Fighter* must surely deserve the accolade of being one of the most sensible £29.99s you ever grudgingly extracted from your wallet. It's one hell of a flight-sim, with a great feel of what it must be like to fly one of these radar-invisible demons. Hideously complex, but incredibly rewarding once you've got stuck into it.

Rated 96% in STF 12

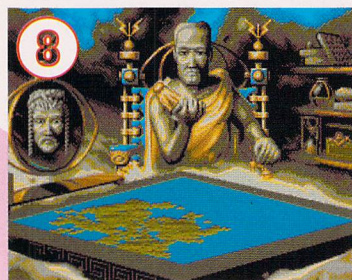
THUNDERHAWK CORE DESIGN



A flight-sim which has been peppered with a delightful selection of shoot-'em-up elements. The Thunderhawk AH-37M – or is it AH-73M? – is a super high tech attack helicopter used in top secret missions where hordes of screaming jet fighters would be a bit of a giveaway. You get to pilot the missions, toast the enemies and get shouted at by the chief tactician if you screw up. Terrific animated intro sequence, too.

Rated 91% in STF 28

POPULOUS 2 BULLFROG



The god game. If you've ever been fuming with inner rage after a ticking off from your mum as to how messy your bedroom is and how you never help around the house, then *Populous 2* enables you to escape, to become immortal – you can be a deity who rules all, who makes decisions affecting millions of people and who never once has to concern himself with petty things like keeping his bedroom tidy. Dream on.

Rated 95% in STF 30

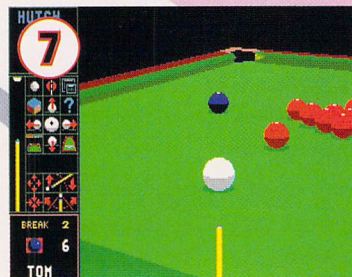
WIZKID OCEAN



A little green man nipping off to the toilet is the basic premise of *Wizkid*. He has a quick wee and is subsequently carried off by an inflated contraceptive. Then, he meets up with a dog reading a newspaper on the toilet and a rather confused-looking donkey. A mad, mad game with lots of variety and hidden sub-games and genres. Catchy music and illogical, DIY puzzles – but plenty of clues. Utterly brilliant and utterly idiotic.

Rated 92% in STF 37

JIMMY WHITE'S WHIRLWIND SNOOKER VIRGIN



We all know the Archer Maclean anecdote about how he conceived this game after a dream in which he was flying around a snooker table. Yeah, right. So we all know what Archer Maclean gets up to just before he goes to bed. Yep – he eats cheese and plays snooker all the time. Actually, he doesn't. But this is the only snooker simulation worth chalking your cue over... or some other unlikely and rather forced sporting metaphor.

Rated 94% in STF 27

DUNGEON MASTER MIRRORSOFT



Mr Ricketts is still gibbering on about this one to this day. "It's great!" he gibbers, "I completed it, but I still play it, and try to make it more difficult for myself!" Ye-es. It's difficult to fathom exactly what the hell he is going on about, but this rich and varied 3D RPG was so influential, it's still being copied as you read. Probably. Anyway, it's all about leading warriors, defeating the great Lord and solving devious puzzles. And it's brilliant.

Rated 92% in STF 31

1 THE SECRET OF MONKEY ISLAND LUCASFILM/US GOLD

Oh, what a surprise. Not. (Sorry.) *Monkey Island* is much, much more than just a game. It's turned into something of a legend. What's amazing about it is that the technology to create this kind of thing has existed for ages – it's just that no one has ever harnessed this kind of visionary approach to games programming before. Lucasfilm lobbed an effortless sneer in the direction of the traditional adventure game format and cre-



ated the first outing of one Guybrush Threepwood – a wannabe pirate and virgin adventurer.

The graphics are unbelievable – each backdrop is its own individual work of art. Hardly an action goes by without some kind of slyly humorous comment or affectionate nod to some kind of existing idea, attitude or film genre. It's a game that literally takes you over – the Mastermind situation... once you've started it, you've got to finish. It features some beautifully structured and carefully placed twists and double-turns and it is probably the

only game-playing experience that leaves you feeling like you've just sat through a brilliant and multi-faceted movie.

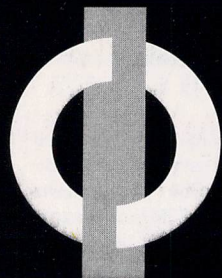
Of course, the downside is that you didn't get to check out the sequel – an even better game which, in its Amoeba guise, comes on a massive 11 separate disks! But don't worry about that – if you've played *The Secret Of Monkey Island*, you can, at least, be satisfied that you've experienced the greatest bunch of bytes ever to be punched into your ST. If you haven't played it, you are living a sheltered life and we

at *ST FORMAT* order you to buy it as soon as you get a spare second. It'll change the whole way you look at your ST's capabilities and will definitely cheer you up in the dour, winter nights to come. Incomparable.

Rated 94% in STF 23

Tell me, Guybrush, why do you want to be a pirate?





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COVER DISK 42

It all happens here with this month's tasty selection of software. Chris Lloyd shows you the ropes

THIS MONTH'S MENU

The Last Arcadian Brilliant 3D flight sim.	Page 24	Downfall Excellent snow-'em-up.	Page 27
Ozone Platform leaping of the highest order.	Page 25	Improvisor Demo of amazing MIDI package.	Page 25
Spacewar Two-player classic with knobs on.	Page 28	Rubricks Screen saver with a twist.	Page 28
Fractal Engine Definitive fractal generator.	Page 27	Back-Up Keep your disks safe.	Page 28

The Last Arcadian

BY: MICHA STALPERS
RESOLUTION: LOW ONLY
FILES: ARCADIAN.PRG AND FOLDERS DATA AND OBJECTS
GET STARTED WITH: ARCADIAN.PRG

It's the year 2389, well, no it isn't actually in case you hadn't noticed, but just imagine it is and that the solar system has been colonised by an evil alien horde. You do what any right-minded individual would do in that situation and get together with a bunch of tasty fighters and get in there shooting and bombing.

The Last Arcadian is a 3D flight sim which puts you in control of a squadron of Mantas – see what they do in that box up there on the right. Use the joystick to control your craft and

whizz about wasting the enemy. The task is to destroy the enemy bases and get back to your own. The enemy bases spit ships and missiles every now and again which do their level best to

interfere with you. It's up to you to take control of the situation by running the ARCADIAN.PRG, firmly grasping your joystick, getting in there and kicking some bottoms.



■ This is the sort of view you need to get in the *Last Arcadian*; looking straight down at an enemy base as you bomb it to bits.

READ THIS FIRST

Tread carefully

To keep your *STF* Cover Disk safe, write-protect it by moving the black tab so you can see through the hole. Nothing can now be written to your Disk. Write-protection also keeps your Disk safe from viruses.

Study the map

Space on Cover Disk pages is limited, so you may find text files on the Disk. These have the file extension

.DOC. It's always a good idea to read these for more information on the program. Double-click on them and select Show to display the text. If text disappears off the screen when you try to read a DOC file in low res, change to medium res and try again.

Avoid the pitfalls

To keep your *ST FORMAT* Cover Disk safe you should make a backup, so if anything goes wrong you still have

the original. Because we use a special disk format to squeeze programs on to the Disk, you can't do a direct disk to disk copy. But we've made life easy for you with this *Back-up* program. Follow the instructions on page 28 and you can't go wrong. Now there's no need to risk damaging or losing your disk again!

Some programs are compressed to fit on the Disk and cannot be run directly from it. Follow the instruc-

tions in these Cover Disk pages and everything is sure to come up roses.

Close, but no cigar

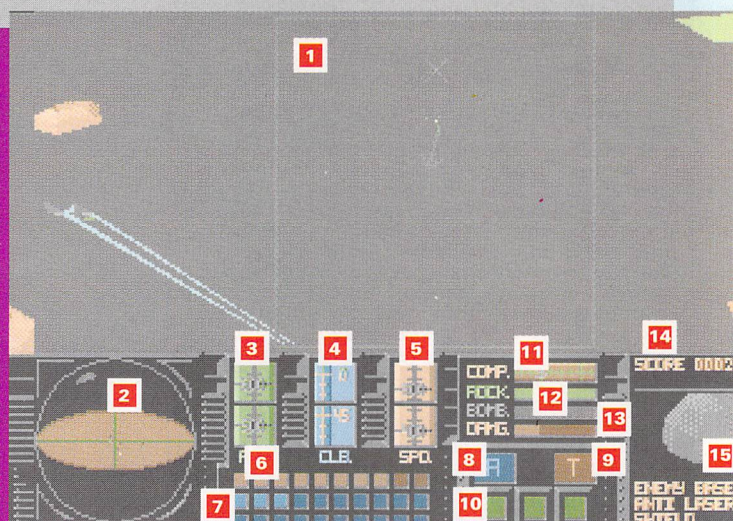
We use a double-sided disk format. If you only own a single-sided drive you can't read *STF* Cover Disks, or any current software. This is because single-sided drives are obsolete. We brought you a guide to fitting internal drives in *STF* 32 – turn to page 58 to order a copy if you missed it.

FLYING MANTA

Read these instructions carefully, then tear out the page and eat it just in case the alien hordes come round your house and decide to nick your spaceship. The early planets are easy enough, though later you need to order your friendly forces into attacking different targets. Good luck.

- 1 Map display** – press <M> to toggle it off and on. You appear as a little arrow, other things appear as coloured dots. You lock onto targets by using the cursor keys to move the cross about, then hit <Return> when it's positioned over the desired target. You can now order Mantas to attack it or fire rockets at it.
- 2 Radar** – a spot of early warning as ships home in on you.
- 3 Altitude** – you get a warning in the message window if this drops too low.
- 4 Climb** – shows your climb and fall angle, you go vertically up and down without any problems.
- 5 Speed** – use the <-> and <+> keys to adjust it.

- 6 Rockets left** – once you've locked onto a target you can fire a guided rocket at it by pressing <R>, each Manta starts out with ten rockets.
- 7 Bombs left** – pressing releases a bomb, the only way to destroy an enemy base is with repeated hits, each Manta comes with 20 bombs.
- 8 Automatic pilot** – pressing <A> switches on the automatic pilot; your Manta then heads for the locked target.
- 9 Turbo active** – for a serious boost to speed, you have to press <T>.
- 10 Manta busy** – you can order the nearest Manta to attack a target you've locked onto by pressing <G>. You can control up to three ships; these light up when they are busy being tough.
- 11 Compass** – er, compass.
- 12 Rocket and bomb reload** – wait while things are reloaded when you've fired.



- 13 Damage** – when the bar disappears it's kerbluey for your Manta.
- 14 Message** – handy little snippets appear here. Pressing <N> tells you how many Mantas you have left and <P> to see if you have permission to return to home base.
- 15 Target lock window** – targets you've locked on to appear here with info.

Ozone

BY: NICK HARPER
RESOLUTION: LOW ONLY
FOLDER: OZONE
FILES: OZONE.BWE, RUN_ME.PRG,
OZONE.TOS
GET STARTED WITH: SEE BELOW



■ Watch out for the snails in *Ozone*, they're deadly. Luckily our hero has found a good little hidey-hole. Along the bottom is the number of power-ups that have been collected, how many lives you have and any special items that you've collected. At the top are two bars for your health and how much ammunition you've got left.

Go on, admit it, you like a good platform game, don't you? *Ozone* is a cracker of a platform game. Your joystick controls this cute little blue fellow as he battles and leaps through 13 levels of devious puzzles and equally cute but deadly enemies.

To pack this epic onto the disk it has been archived – that is, squashed down to a fraction of its size. Get a spare disk ready and run RUN_ME.PRG, put the new disk into your drive when prompted and put the kettle on – it takes a few minutes to uncrunch all the files. When it's all done you have an auto-booting *Ozone* disk. Switch on your ST with this disk in the drive and the game loads and runs automatically.

Use the joystick to move around. Pushing it up causes a jumping experience – the longer you hold it up the higher he goes. To activate switches and buttons or go through doors, stand in front of them and push down. There are six different special icons to collect and use in the right place. They appear on the bar at the bottom, you have to activate them using the

function keys F1 to F6. If you do well, you find a room with clues to the access codes. It's playable and completely groovy, so get leaping.



■ *Ozone's* first levels are relatively easy, later on it gets much much harder. The old grey matter could well end up getting stretched about a bit. *Ozone* is Shareware and registration brings a rather handy leaflet with hints and codes.

Improviser

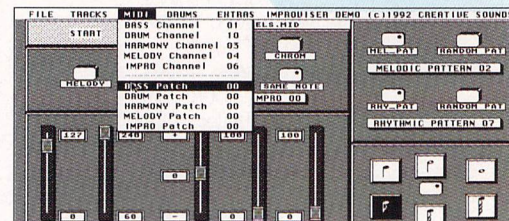
BY: CREATIVE SOUNDS
RESOLUTION: HIGH ONLY
FOLDER: IMPRO
FILES: IMPRO.DOC, IMPRODEM.GIA, JING-BELS.MID, IMPRODEM.PRG
READ: IMPRO.DOC
GET STARTED WITH: IMPRODEM.PRG

Music isn't something you're going to pick up overnight – like any skill worth its salt it takes time, practice and a fair share of blood, sweat and banging your head against vertical surfaces. *Improviser* enables you to use MIDI to construct

improvised music based on simple rhythmic and melodic phrases. It doesn't improvise in the human sense, but it does show you the basic building blocks.

Improviser only works in high resolution so if your desk isn't lucky enough to be sporting a super-crisp monochrome monitor you need an emulator to fool your ST into running high resolution programs in medium res. Cover Disk 40 featured just such a goodie called *Sebra* and you also need a MIDI instrument connected up as well. *Improviser* plays out a four track song of bass, drums, harmony and melody – terribly clever. It does everything in real-time, working out the harmony track and then a scale to match it. The demo has the file functions and a few

other bits and pieces disabled, but is otherwise fully working and gives a taste of what is possible. Have a read of the comprehensive document file on disk for all the juicy details.



■ *Improviser* in all its real-time improvising glory. The full version is available for half-price until the end of January – see page 13.

Ladbroke Computing



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Ladbroke Computing International are one of the longest established home computer dealers in the UK. We have developed an extensive customer service policy which involves testing of all Hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup.

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- Will fit any ST(F)(M) or Mega ST. Solder in design for higher reliability.
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Optical Mouse	£ 24.99
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The Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully Optical mechanism means no moving parts offering far higher reliability. Includes Mat.

Jin Mouse	£ 7.99
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Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical mouse featuring 290 Dpi resolution.

Ladbroke's Mouse mat	£ 2.98
----------------------	--------

Please add £2 for P&P on mice.

Floppy Drives

- 720K formatted capacity.
- Double sided, Double density.
- Daisy Chain Through port for compatibility with older ST(M) machines.
- External Power Supply.
- Attractive case design.

GI External drive	£ 54.99
-------------------	---------

ST Internal drive	£ 39.99
-------------------	---------

Hand Scanners

- 100,200,300,400 Dpi resolutions.
- 1 letter mode, 3 photo modes.
- 105mm scanning head.
- Includes the excellent MIGRAPH TOUCH UP 1.8. This is the full package with manual.
- Includes DELUXE PAINT ST, full package with animation and manual. One of the best available art packages for the ST.

- MIGRAPH's OCR Package available as an Upgrade to all Golden Image Scanner Owners.

Golden Image Scanner	£ 119.99
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Silhouette

- Autotraces bit image graphics to resolution independant vector graphics.
- Produces Beziers, B-Splines, High resolution grey scales.
- Imports IMG, DEGAS, TINY, MacPaint, GEM, SGF files.
- Exports IMG, GEM(1,3), SGF, DXF, EPS(Postscript) files.
- Requires 1Mb ST, Hi-res monitor.

Silhouette	£ 60
Calamus CVG support coming soon.	

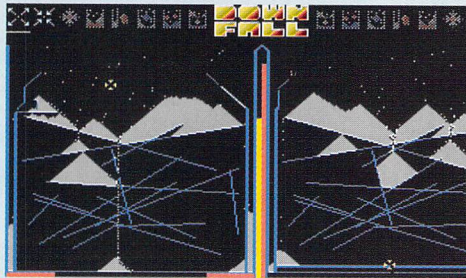
Downfall

BY: ANDREW SAGE
RESOLUTION: LOW RESOLUTION
FOLDER: DOWNFALL
FILES: READ_ME.DOC, DOWNFALL.PRG
READ: READ_ME.DOC
GET STARTED WITH: DOWNFALL.PRG

Got a friend? Fancy driving him crazy? Good, now try *Downfall* on him, it's a two-player effort that's worthy of a serious outing. This is a mixture of strategy and joystick manipulation skills – the basic idea is not to get snowed under. Open up the DOWNFALL folder and run DOWNFALL.PRG.

The screen is divided vertically into two, half for each player and snow falls from the top of the screen. To win, you just have to make the snow pile up to the top of your opponent's side

of the screen before it does yours – easy. Your joystick controls your cursor, just plug a second one into the mouse port for your friend. At the top of the screen you each have a row of icons, click on these with your cursor to activate them. Along the side of each area are two small tubes,



■ *Downfall* – an original and rather snowy game where you and a friend use brains and manual dexterity and, failing that, a quick rabbit punch to compete in the piling-up-snow stakes.

once the snow in these reaches the top you gain the ability to use more of your icons.

Between the two playing areas are your energy bars – using the icons drains these momentarily. At the bottom of each side is a hole, when snow falls into the hole two coloured bars appear below your section. When the bars meet, the floor of your opponent's section is raised. Sounds a little complex but it isn't – after a few games you get the hang of things and it comes into its own.

The first step is to create a couple of 45 degree barriers to funnel snow into your power-up tubes and then funnel the rest of the snow into the bottom hole. Of course your opponent does the same. You can create and destroy barriers on both sides, so don't expect things to stay positioned as you've built them for long. *Downfall* is a refreshing and original game that should provide hours of good clean family entertainment. It says here.

SNOWED UNDER

The secret of success in Downfall is getting to grips with the icons along the top of the screen. Initially only two are highlighted and useable. As you collect more snow in your side tubes, more icons become available. Just click on them to select them. Choose wisely and then let 'em have it



Destroy barrier – erases barriers, uses up more energy if you destroy barriers on your opponent's side. Select this icon, then use the joystick to choose your position and press <Fire> to start zapping.



Build barriers – builds the blue barriers in the same manner, again it uses up more energy if you do it on your opponent's side.



Control reversal – reverses the joystick controls of

your opponent for a while. How annoying for them, eh?



Snow fall – makes all the snow fall on your opponent's side for a while – not always a brilliant tactic, so use with care.



Extra energy – this has a permanent and cumulative effect. It increases the rate at which your energy bar gets to be replenished.



Black holes – enables you to place ten pixels that

teleport snow falling into them to the same position on the other side. Needs a bit of planning to use effectively.



Snow melt – turns all the snow on your side into hot stuff that melts any snow it touches, can be handy for clearing piles of the stuff.



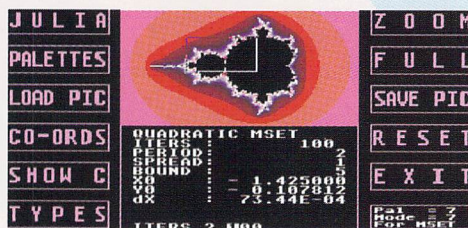
Stop bar – stops the bar at the bottom of your screen from moving up when your opponent fills the bottom hole with snow. Can be a handy life-saver at times.

Fractal Engine

BY: DANIEL GRACE AND MIKE HARRIS
RESOLUTION: LOW ONLY
FOLDER: FRAC_ENG
FILES: FRAC_ENG.DOC, DISPANIM.PRG, FRAC_ENG.PRG AND ANIMATE, COORDNTS, DEFAULTS AND PICTURES FOLDERS
READ: FRAC_ENG.DOC
GET STARTED WITH: FRAC_ENG.PRG

Fractals involve some complicated mathematical theories to produce graphical representations of wacky equations with numbers that don't really exist – like the square root of minus one. All rather spiffing and useless except that the graphics produced are stunning. You don't, however, need to have a grasp on all the complex theories to produce your own wonders.

There are loads of fractal generators about – you've probably got quite a collection by now if you've been collecting our Cover Disks. What makes the *Fractal Engine* special are the eight fractal types and the ability to produce serious animations. You need the FRAC_ENG folder on a separate disk. An easy way to do this if you don't have a second floppy drive, a hard drive or aren't competent with RAMdisks is to use *Back-Up*, then delete all the other programs. You need plenty of disk space to store your cre-



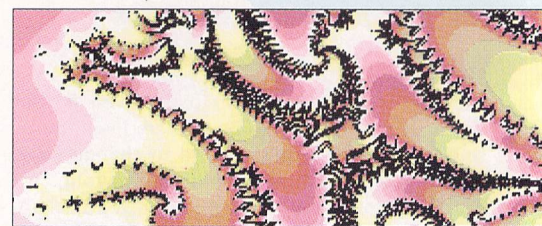
■ The main screen from *Fractal Engine* – the top window holds your fractal ready to be zoomed about in. The bottom window holds the coordinates of the fractals position within the set.

ations, especially if you want to start creating your own animations.

Load FRAC_ENG.PRG and press the mouse button to get past the title screen. There is a comprehensive document file with full details on the lot. Here's the quick and dirty guide. First click on TYPES and use the TYPE – and TYPE + boxes to choose one of the fractal types, then click on CHOOSE. Answer YES to the alert box about losing the current picture. Now click on ZOOM and a box appears in the little window over your fractal. The left mouse button decreases its size and the right increases it. When you're happy with the position of the box, press the Spacebar and click on IN on the alert box. The number of iterations determines the accuracy and complexity of the drawing, 100 should be fine, use a spread of one and away

you go. A full size picture takes longer, so save this option for when you've got a pretty one. Before your very eyes the picture develops. There is a small squad of example files to load in, these are held as coordinate files, load 'em in from the CO-ORDS option.

For a quick look at what else you can do, load in the full-sized picture on the Cover Disk. Select Load Pic and click on Yes when you're asked if you want to load a full-sized picture. Up pops the file selector, and inside the Pictures folder you find a wonderful example of what the *Fractal Engine* can do. Answer Yes to a small copy and you are returned to the main screen ready to start zooming about again. Once you have sussed things out, try going for an animation or two. Fractals can be habit forming, so be careful out there.



■ The results from *Fractal Engine* can be some of the most hypnotic and beautiful patterns you are likely to see. Wow and double-wow.

Rubriks

BY: THOMAS SCHALLAR
RESOLUTION: ALL RESOLUTIONS
FOLDER: RUBRIKS
FILES: RUBRIKS.ACC
GET STARTED WITH: SEE BELOW

Leaving your ST's monitor switched on for long periods displaying the same picture doesn't do it much good. It can cause phosphor burn-in, which leaves a faint ghost of the image on your screen. There are a good few screen savers about that either blank the screen or display a moving image. *Rubrick* is one of the best, turning your screen into one of those sliding puzzles. It kicks in after a period of inactivity but don't worry, touching the mouse or keyboard restores everything.

Rubrick is a Desk Accessory – that is, it's loaded into your ST when it's first switched on and is then available from the Desk menu. To do this it needs to be in the root directory of your boot disk – that is, it's not inside any folders on the disk in the drive when you first switch on. Copy the file RUBRIK.ACC file from inside the RUBRIK folder onto a new disk and reset your

machine. You can adjust all the settings by selecting *Rubrik* from the Desk menu – you can change the time it takes before it starts sliding your screen about, as well as the speed, the appearance, and what stops it moving. You can

save your favourite settings, although for some strange reason it only seems to save on hard drive systems. There is a little switch at the top left of the box to turn him off if you want to study a still screen for a while.



■ Don't panic, it's not some strange affliction that has overtaken your ST. It's the *Rubrik* screen saver doing its thing, everyone say - er, look it's the *Rubrik* screen saver doing its thing.

Spacewar

BY: HOWARD JONES
RESOLUTION: LOW ONLY
FOLDER: SPACEWAR
FILES: SPACEWAR.PRG, SPACEWAR.DOC
AND FIVE .DTA FILES
READ: SPACEWAR.DOC
GET STARTED WITH: SPACEWAR.PRG

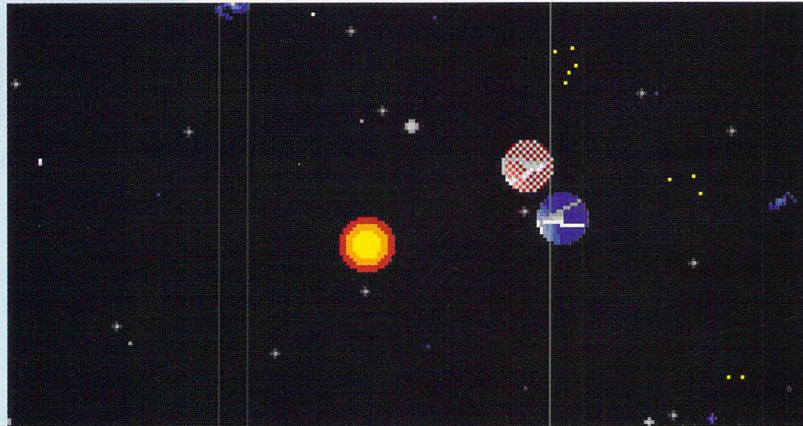
Got a friend? Is he still your friend even after you've buried him under a huge pile of snow? Try this. The idea is simple, just as the best ones always are. You each use a joystick to control a little spaceship – press forward to thrust and pull back to activate your special feature if you have one.

Hit <Fire> and send a photon torpedo with your enemy's name written on it spinning into space. From the main menu you can select your

options. There is a central sun which has a variable gravity and you can choose from a range of special features or use dual mode where each player chooses one with his joystick. You can

fire up to five shots at once and er, that's about it really.

Lots of good clean fun to be had blowing your opponents' ship into so much space dust.



■ Deep in space around a burning yellow sun the two mighty warships come close enough for the respective captains to lean out of the windows and make uncomplimentary gestures at each other. *Spacewar* - in space, nobody can hear you gloat.

Cover Disk Back-up

BY: BRIAN TILLEY
RESOLUTION: ALL RESOLUTIONS
FOLDER: BACK_UP
FILES: BACK_UP.TOS
GET STARTED WITH: BACK_UP.TOS

Accidentally mucking-up your Cover Disk is not really what you want to do. Even if you think you don't want to be bothered with making copies now, you're bound to change your mind later when it all goes horribly wrong. To be absolutely safe, you should make a backup copy immediately you get it.

Because our disks use an extended format, we can squeeze more goodies on each one but it means you can't do a standard Desk-top copy. No problems, on the disk is the excel-

lent *Back-Up* which does a quick and easy copy in two shakes of a lamb's tail.

Before you do anything, write-protect your Cover Disk – move the little black tab so you can see through the hole. Now nothing can be deleted or written to the disk. Now get a new disk ready and run *Back-Up*. From the menu press <1> and swap disks when you're prompted. In just a twinkling of an eye you have a fresh new copy of your Cover Disk. Remember that the source disk is the disk you are making the copy of – that's the Cover Disk – and the destination disk is the intended back-up disk, otherwise you might get pretty confused. If you have two drives then drive A is used as the source and drive B as the destination.

Back-Up can also be used to back-up other disks. Press <2> to see if that's possible. You can't get past the copy-protection on commercial disks and anyway copying them is illegal, but almost all other disks can be copied quickly and easily.

PROBLEMS?

My Disk is duff!

ST FORMAT duplicate thousands of disks every month and inevitably a few go a bit wonky. If you can't load any programs or open a window at all, you may be unlucky enough to have a defective disk. Don't worry – we guarantee a free replacement. Send the disk in a sturdy envelope along with a brief note highlighting the problem and a self-addressed envelope (we pay the return postage) to:

**ST FORMAT January Disk Returns,
 DisCopy, Units 2 and 3
 Omega Technology Centre,
 Drayton Fields,
 Daventry,
 North Hants
 NN11 5RT**

I can't work a program out

Everything loads OK, but there is still a problem with one of the programs. You've read the Cover Disk pages and all the on-disk documentation and yet you still can't figure it out. Give us a ring on ☎ 0225 442244 and we'll do our best to help.

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Sensible
SOFTWARE

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KNIFE ST

There are two programs on this month's extra Cover Disk - and they're both brilliant - there's been no skimping, no, we're not like that on *STF*. We bring you *Knife ST*, the most comprehensive disk and memory monitor, editor and data recovery program available for your ST. And we bring you *Michtron BBS*, so you can set up your own bulletin board. Wow

JARGON BUSTERS

ADDRESS FIELD: Area before a sector containing the location of the sector on the disk. Consists of track number and sector number.

BOOT SECTOR: Contains data which describes the format of the disk.

CLUSTER: Data is stored in clusters 1,024 bytes long, on STs a cluster is made up of two sectors.

DIRECTORY: A list of the files on a disk and their length and start location.

EOF: End of File.

FATs: File Allocation Table; stores the location of every part of a file.

INDEX FIELDS: Another name for the address field at the start of a sector.

LOGICAL SECTOR: The sectors on a disk are numbered sequentially starting with track 0, sector 1, side 0 (logical sector 0) and going up to track 79, sector 9, side 1 (logical sector 1440).

SECTORS: A disk track is split into 512 byte segments to make data more manageable. Each segment is called a sector.

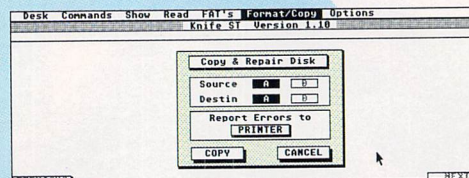
SOF: Start of File.

TRACK ADDRESS FIELDS: Contains details of each sector on the track.

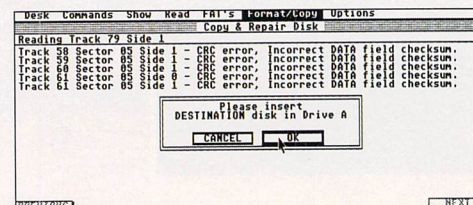
One of the worst and easiest things you can do to your system is to accidentally erase files and disks containing the only copy of vital data. If you do not have a disk editor program the data is lost forever - this is where *KnifeST* can help. In the following pages we explain how to recover data and files that have been erased from a floppy disk on a single floppy drive system.

ST FORMAT WARNING: Always work on a backup copy of the floppy disk which contains the erased files - this ensures that no more damage occurs to your files. Remember that a disk editor can destroy data if you do not know what you are doing.

Recovering files with KnifeST



The first thing to do is make a backup copy of the damaged disk. Go to the Format/Copy menu and select the Copy and Repair option. This dialog box appears with just a few simple options, if you have two floppies then select drive B as the destination. Put the damaged disk in drive A with a blank disk ready, and click on the Copy button. *KnifeST* reads the disk into memory and prompts you to swap disks when necessary.



Information about physically damaged areas of the disk are displayed on-screen (and on a print-out if the printer option is highlighted). If there are damaged areas, make a note of the track, sector and side number. If you have a 520 ST, you may have to make more than one disk swap to make a complete backup. If you feel paranoid, you may want to make a copy of the copy - this double coverage can be useful if ruin your first backup.

Case 1 - Recovering a deleted file

If you have accidentally deleted a file then it is usually possible to recover it completely as long as no other data has been written over it, so if you do happen to have dragged something to the trash can by mistake, then you must not use that disk again until the data is recovered. Load up *KnifeST* and put the disk with the erased file on it into drive A, then go to the Show menu of *KnifeST*. Select the Directory option and a full listing of the root directory is displayed in a large dialog box. Any file that has the first letter of its name replaced with a bomb symbol has been deleted - clicking on the filename displays details of the file.

HOW DOES A FLOPPY DISK WORK?

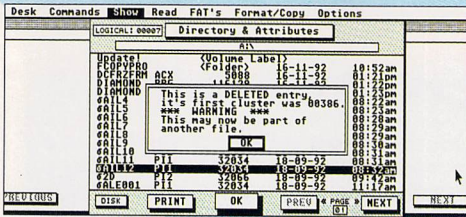
It helps to recover your data if you can understand the intricacies of how a floppy disk works. So here, for your enjoyment, is an explanation.

A floppy disk is a magnetic storage medium which works in a similar way to cassette or video tape, except that a floppy disk is circular rather than a continuous strip of tape. Information is stored on the disk in a series of concentric rings called tracks, there are usually 80 on a 3.5 inch floppy. Each track is subdivided into a series of segments

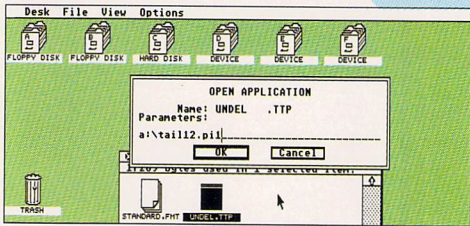
rather like slices of a pie called sectors; there are usually nine or ten sectors on a disk. On a standard formatted ST floppy disk, each sector can store 512 bytes of data; with nine sectors per track and a total of 80 tracks, this makes a total of 720K on a double-sided disk. More data can be stored on a disk by increasing the number of sectors to 10 or 11 and increasing the number of tracks to 81 or 82. Formatting disks beyond these limits may cause the disk to become unreliable.

In addition to the disk rotating, the read/write head moves over the disk from the edge towards the centre, to enable access to the tracks. The read/write head is controlled by a stepper motor, this can move the head in accurate steps very quickly so that it lines up with the correct track on the disk. So with the disk rotating at around 300 rpm and the read/write head moving back and forth along the radius of the disk, large amounts of information can be written or read very quickly.

When formatting programs lay out the sectors on a track, information about each sector is stored in the address field at the start of the sector. This is a special area that is not used for storing program or file information, but holds information that your ST can use to find the correct position on the disk surface. The sector number and track number are stored here, so on a standard ST disk the first sector is recorded as track 0, sector 1, and the last sector on a disk is track 79, sector 9.



■ Make a note of the name and path of the file you wish to recover - the full path name is shown at the top of the dialog box. Here the files we wish to recover are in the root directory (that is, not in a folder) so the path is simply A:\. The full path and filename must be entered into the recovery program to save the file, so the file we are trying to save is A:\tail12.pil. Remember, if new data has been written to the disk then you may not be able to save the file.



■ Exit from KnifeST and load UNDEL.TTP from the KnifeST disk by double-clicking on it. A text command line appears in a dialog box, enter the path and name of the file you wish to recover, place the disk with the file you wish to recover in the drive and click on OK. The program tries to recover the file; first it tells you what it thinks the file length is. Press a key to start the process.

UNDEL scans the disk and repairs the file cluster by cluster until the file is fully recovered, if the file cannot be saved then a message tells you the full file is beyond repair. You can still recover some of the file, however, using the Build file option of KnifeST. Once you have recovered the file, or files, write-protect your disk and make a backup.

Case 2 - Recovering data from bad sectors

When you get the infamous "Data on the disk in Drive A is damaged" message, it usually means that there is physical damage to the disk itself,

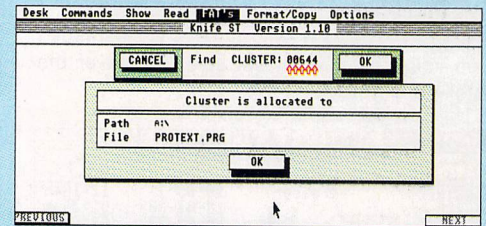
WHAT'S A TTP PROGRAM?

The program supplied with KnifeST to recover files is called UNDEL.TTP. A TTP program is a special type of GEM program which enables information to be entered into it before it runs - in this case, the path and name of the file to be recovered is entered onto the command line. The program then uses this information

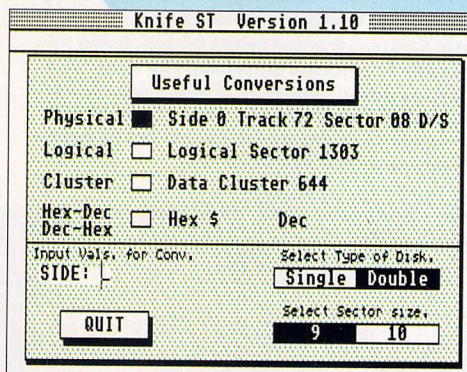
in the attempt to save the file. Although the standard wildcard characters (* and ?) can normally be used to replace characters in the TTP command line, it is not recommended that you do so with UNDEL.TTP because this confuses the program causing it to select the first file it comes across.

or to the magnetic information held on the disk. In many cases you can use the backup you created using the Copy and Repair option. If you can get at the data, then copy all the files you can to a newly formatted branded disk.

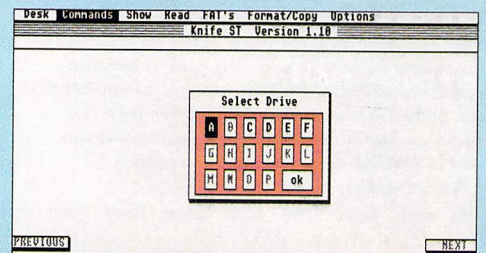
However, in many cases the data cannot be recovered as simply as this. Go to the Format/Copy menu and select the Analyse Floppy option and put the original damaged disk in the drive, ensuring that it is write-protected. If you have a printer connected, select the Printer button to produce a hard copy of the faulty sectors, if not select Screen and make a note of the damaged areas. You need to record the track, sector and side numbers to pinpoint the exact cluster number where the damage has occurred. After you have found the information, switch to the backup disk which you're going to repair.



■ Exit from the conversion dialog box, go to the FATs menu and select the Which File? option. Enter the relevant cluster number (we've used 644) and press <Return>. The name of the file that has that cluster allocated to it is displayed. If it is a program file that is corrupted, you can simply re-install it from the master disk. If it is a data or text file, you may be able to use it without problems although most programs do not load corrupted data.

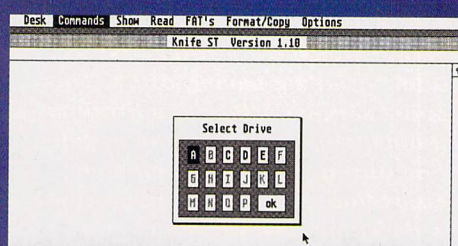


■ Press <Help> and this is the dialog box you see, it converts the data obtained from the Analyse Disk section to a cluster number. Select Physical and enter the side, track and sector details. These figures are then converted to a logical sector number and a data cluster number. Here the cluster number is 644, you need to note yours down.

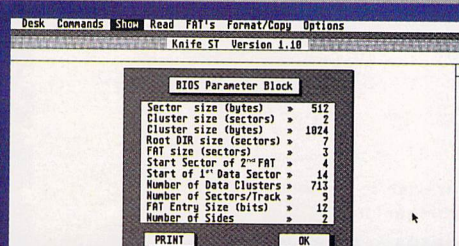


■ If the data cluster entry on the Conversions dialog is N/A instead of a number this means that the damage is to either to one of the File Allocation Tables (FATs) or the disk directory, in this case the logical sector number indicates where the damage has occurred. On an ST disk, the first FAT is on logical sectors 1 to 5, the second is on logical sectors 6 to 10 and the directory starts at logical sector 11. If the directory is damaged, go to the Commands menu and choose the Select Drive option. This dialog box appears. Ensure that drive A is highlighted and click on OK.

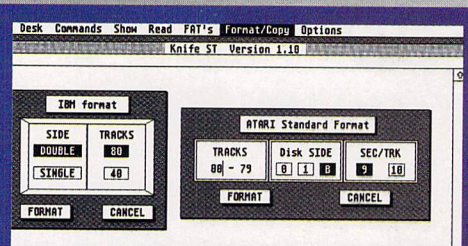
SOME USEFUL FEATURES OF KNIFE ST



■ If you are using the program from a single drive system, then drive A is automatically selected for editing. If you have a two floppy or hard drive system, then will have to select which drive you are going to edit. To do this go to the Commands menu and click on the Select Drive option to bring up the Select Drive dialog box. Click on the letter of the drive you wish to work on and then click on OK.



■ When you are confronted with a disk and you are not sure of its configuration - the number of tracks, sectors, sides, number of FATs and so on - then you can use the BIOS PARAM BLK command from the Show menu. When you select this option, a dialog is displayed showing the complete details of the disk in question. This data can then be used for editing purposes.



■ One of the useful features of KnifeST is the ability to format disks to IBM parameters, this enables data to easily be transferred between STs and PCs. PC disks can be formatted with either 40 or 80 tracks and be single- or double-sided. Atari standard disks can be formatted to nine or ten sectors, 0 - 81 tracks and single or double-sided. Custom formats can also be created by changing parameters such as the number of sectors and the cluster size.

Case 3 - Garbled FATs

You can see when you have a garbled FAT because the data in files is completely wrong, this most often occurs when a disk swap has taken place that the ST hasn't registered. Sometimes only one FAT has been garbled and you can use the Compare/Copy function to sort it out. In most cases the machine usually writes to FAT 1 first, so copy FAT 2 to FAT 1. Normally it is the most recently saved files that have become garbled, so check them first to see if they are OK. If both sets of FATs are damaged then you are probably not able to recover the data in this way.

LOGICAL: 00007 Directory & Attributes			
A:\			
MAASTRIC	<Folder>	16-05-93	12:18am
EXFILE	27	18-07-88	01:36am
GREEK	289	05-04-89	04:05am
README	666	24-09-92	11:44am
STARTUP	93	17-12-89	07:00pm
TUTOR1	16365	22-11-90	02:23pm
TUTOR2	15953	22-11-90	02:24pm
TUTOR3	12439	22-11-90	02:24pm
TUTOR4	19102	22-11-90	02:24pm
PROTEXT	CFG	23-11-90	11:13am
COMMAND	HLP	22-11-90	12:01am
DESKTOP	INF	18-07-88	01:36am
WIDTHS	PP	17-05-89	04:20am
DESKJET	PPD	08-11-90	03:23pm
DIABLO	PPD	08-11-90	03:20pm
DJ500	PPD	11-12-90	03:06pm

Now go to the Show menu and select Directory. If you can read all the entries in the directory then you should be able to copy the files to another disk, if some of the directory entries are garbled then copy the files that you can salvage. If the logical sector number indicates that one of the FATs is garbled then you need to repair it.

IT CAN DO ALL THIS!

KnifeST is an all-purpose disk and memory editor that you can use with both floppy disk and hard drives. Its functions include the ability to undelete erased files with ease, rebuild lost files from disk, examine and alter data in programs and files, run other programs from within itself, examine and edit non-GEM disks, alter the directory structure of a disk and even change the attributes of a file to hide programs or data from prying eyes. *KnifeST* can

also read and repair damaged disks, format floppies to unusual formats and produce PC-compatible disks. However, *KnifeST* cannot be used to copy protected games disks or read Amiga and Mac formatted floppies.

KnifeST works by ignoring all the normal disk protection built into GEMDOS. You must be very careful when altering data because changing a single byte of information can result in destroying a file.



You know from the logical sector number if it is FAT 1 (sectors 1-5) or FAT 2 (sectors 6-10). The trick is to copy the good FAT to the bad FAT. Here we know that FAT 1 is damaged so we must copy FAT 2 to FAT 1 to repair it. Select Compare/Copy from the FATs menu and select Screen. Doing this this presents you with this dialog box if the FATs are not the same. Select FAT 2 as the source and FAT1 as the destination, then select Copy. Once this is done then you should be able to salvage the files and copy them to a good disk.

NEXT MONTH

Although there are those days when just about everything goes wrong so you can't avoid making mistakes with your disks, there are some basic rules you should be aware of to ensure that your disks and the data on them doesn't get damaged. Because we believe that prevention is better than cure, we're going to be showing you how to look after your data to minimise the chance of having to go through what can be tricky repair procedures. Watch out next month!

KNIFE ST mail orderName Address Postcode Telephone Description Quantity Price *KnifeST* manual plus *Knife ST 2* upgrade coupon £14.95Manual with Silver Support Service £29.95TOTAL ORDER

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Secondly, you can get the manual as above, and also register for HiSoft's Silver Support technical backup service for a total cost of £29.95 - that's a saving of £5. This support service offers you lifetime technical help by letter, fax or telephone during the daily technical support hour, free periodic newsletters detailing new products and upgrades to existing titles as well as access to HiSoft's closed user support conference on Cix.

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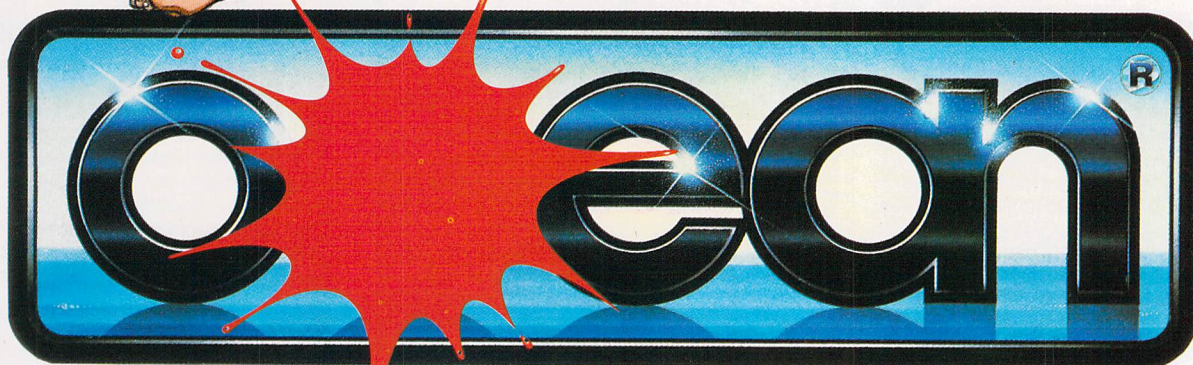
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Setting up the BBS on your system

First you need a machine that can be left on for the time you wish the BBS to be "open" for

callers – a minimum of 1MByte of RAM is recommended although you can just about run *Michtron* on a 520.

The next thing you need is a good reliable modem running at least at 2,400 baud. Finally, you need a hard drive and to be able to dedicate at least one partition of 20MBytes to the BBS; the SIG folders, mail, E-Mail and system soft-

ware take up lots of disk space. OK, now you can open up the BBS folder which is located on the second Cover Disk; you'll see ten folders and files. All these files and folders have to be dragged to the root directory of the hard drive partition you have elected to use for your bulletin board. Follow the five basic steps below to set up the system.

DIFFERENT OPTIONS

The options and menus that you see on-screen when you're logged onto the *Michtron BBS* are contained in the MAIN.MCL file in the BBS folder. The folders DCLICK, SARMCL and VAN_NEST all contain ready-made BBS files that you can use. Move the contents of the

BBS folder to another folder on the hard drive, then copy the contents of DCLICK into the BBS folder. Copy the MCL.TTP program to the BBS folder, run MCL.TTP and then type in the names of all the files with the suffix .M. These are then compiled into files with the suffix

.MCL. When you next run BBS.TOS you find a completely new set of options is available.

Michtron BBS uses modules compiled from text files written in Michtron Control Language which enables customised BBSs to have extra modules added to the system.

THE MANUAL

Obviously we cannot describe the entire programming language on a single page. To get the most from *Michtron BBS v3*, you need the manual. It is available for £9.95 from Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB or call them on 0726 68020. They only have a limited number of manuals, so if you want one you must be quick.

FUNCTION KEY COMMANDS

- F1: Log on to console
- F2: View Modem 1
- F3: View Modem 2
- F4: View Modem 3
- F5: View Modem 4
- F6: Show latest data file
- F7: Show latest upload
- F8: Show latest download
- F9: Show most recent callers
- F10: Show last message
- Shift F1: Multi-tasker details
- Shift F2: Modem 1 profile
- Shift F3: Modem 2 profile
- Shift F4: Modem 3 profile
- Shift F5: Modem 4 profile
- Shift F6: Answer request to chat
- Shift F7: Force caller into chat mode
- Shift F8: Enable chat mode
- Shift F9: Disable chat mode
- Shift F10: Exit Michtron BBS

SETTING IT UP

1 Before you can use the main BBS program, you must configure the system so that it looks for everything in the right place on your hard drive. The other thing that must be set is the maximum speed of the modem. Run the MAINT.PRg, go to the Install menu and select Modem Control. Select the highest speed that your modem can cope with by clicking on the box with the correct number in the Modem 1 dialog box. If you want your system to answer automatically, then type "autobaud,2" in the command line. This answers a call after two rings.

2 The BBS software needs to know from where the system is running. Select Sig Settings from the Install menu and this menu is displayed. On the left you can enter the names of your topic areas, or SIGs (Special Interest Groups), and on the right you enter where on the hard drive these files are to be uploaded and downloaded from. You can also set up private areas for privileged callers by toggling the Yes/No options on the right of the screen.

3 The next option to use from the Install menu is called Limit Control. The top line of the dialog box is used to enter the system name, here the CoverDisk BBS. Set up the default settings for new callers to the BBS, enabling them to become registered automatically and set the time allowed on-line. Many systems give you 20 minutes on-line to look around and then a longer time once you have registered. The system and mail drive partitions can be set and the amount of disk space devoted to messages configured, the default setting of 40 blocks is normally enough.

4 You now have to log onto the BBS so it recognises you. Load the BBS.TOS program; after all the configuration messages have flashed on-screen you are told some files are missing and would you like them to be created? Answer yes to these prompts or the program exits. A message appears saying: "Waiting for a call on console." By pressing <F1> you can log on to the BBS as if you were calling in, enter your name, password and so on until you are registered. Once you have reached the main menu, press <Return> for a list of options and then press to exit.

5 Press <Shift> <F10> to exit the BBS software and return to the Desktop. Now run the MAINT.PRg again and choose Modify from the User menu. The screen should display this dialog box with your details entered into them. You can use this area to change people's status on the board, change your details so that you are a Wizop, give yourself access to all SIGs and increase your time per day to eight hours. Never change a normal caller to anything higher than registered status because higher ratings enable you to access to the BBS system.

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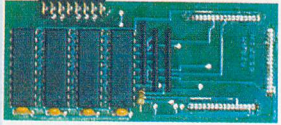
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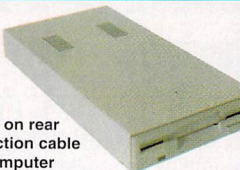
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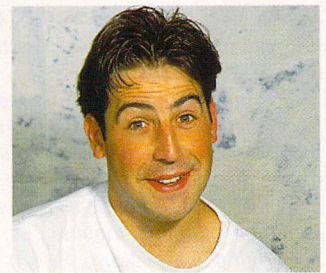
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FEEDBACK



Welcome to Feedback where you can say what you think about life with your ST. If you want to join in this great debate, write to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW

Rather enthusiastic about Falcon

Potentially one of the best aspects of any mag is the letters page, and certainly it's the page I always turn to first. In issue 40 the readers excelled themselves, all apparently because of the Falcon.

I wrote to you a few months ago regarding the so-called threat from PC technology, but Matthew Bednall's dissection of that issue is masterly. I don't know who Mr Bednall is but he knows his technology. However, in my letter I argued that both Atari and CBM had to face up to the real threat from PCs – that of superior marketing forces. Just look at your letters page: Roland Given thinks the Falcon won't see the light of day until this time next year, Micheal Hull mistakes the Falcon as a rich man's STE and poor misguided Anthony Barker believes that the 586 (actually it's the P5, but that's beside the point) will kill the Falcon off. Why?

Simply because Atari have done nothing to market the Falcon.

A couple of press announcements are just not enough. I haven't even seen any adverts in the Atari mags. What Atari should really be doing is advertising in PC mags. Atari need to pull their fingers out with some serious marketing. For God's sake we're talking about the home computer with the power of the \$6,000 NeXT system (and I should know, I use a NeXT at work) for £500! Why aren't Atari sticking that down PC FORMAT's gullet? Alright, so maybe I tend to get too enthusiastic about technology, but I've had an STE for about three years and I wouldn't give it up for anything. Even when I get the hard disk Falcon in the New Year my STE will stay.

In the so-called "real world" there are only three platforms – PC, Mac and Unix (all flavours). PC prices are falling dramatically and people are starting to buy them for

home use (misguidedly, true, but buying them nevertheless). This is eating into the Atari/Amiga market and something drastic needs to be done. Well, how about this: Atari and CBM get together and form an alliance to bring a new home computer standard to the market. Oh, I know it could never happen (but then, look at Apple and IBM), but wouldn't it be something to write home about?

**Darren Smithson
Reading**

stf: Right, guys, let's get a few things straight. Atari have said from the start that Falcon won't seriously be marketed until the New Year. They decided to release 10,000 of the machines over here this year so that all the hardcore Atari techno fans can get your mitts on the latest home computer. Early in '93 they will release a bundled Falcon. This is undoubtedly going to be in a new case and will

cost £399. As soon as this mainstream consumer version of Falcon is launched, Atari are going to start advertising it.

There's been little point in Atari plugging the '92 Falcon because the ST press have been doing such a good job for them. As soon as they've got some quality software to package with the machine (early '93) Atari will get it out to the Currys and Dixons of this world and start selling it through the usual media.

All of this is a bit of shame because Commodore have got the drop on Atari yet again (their 1200 went on sale in early November). Oh – and for the record (before you bury me beneath a flood of letters), here's the official ST FORMAT line on the 1200. First, don't believe the hype; the only thing that the 1200 has got over Falcon is in the graphics department. The 1200 isn't half as quick, it has a small disk drive, no MIDI, no DSP

FALCON TEASERS

We keep getting sacks full of letters about the Falcon; here are a few questions donated by a couple of readers

1. Will ST FORMAT support the Falcon or will there be a separate magazine?
2. Have Atari positioned the joystick ports in a normal position on the Falcon?
3. Do you need a special monitor to access the new modes?
4. What does a multiplexer do?
5. Does the Falcon have multi-TOS fitted as standard? Is it a true multi-tasking system on which you can work on something else while another program can run in the background?
6. Do I need extra software or hardware to use the machine's genlock capabilities – if so how much will the add-ons cost?
7. Will it be possible to upgrade to an internal hard drive later or

will I need to take the external route?

8. Is it true that early Falcons have no multiTOS?
 9. Are Atari going to redesign the case?
 10. How long will this take if they are?
 11. When are Atari going to advertise the Falcon?
- Peter Nicholls and David Wagner

stf: 1. ST FORMAT are going to support the Falcon; at this stage there aren't any plans to have a separate magazine, but obviously if the machine takes off in a big way then this might be considered.

2. At the moment, the joystick ports are in exactly the same place. We don't know if they're going to be repositioned when the Falcon gets its new case.
3. You can get all but the interlaced (no border) modes on a TV. If you want to view the higher

resolutions, you need an S-VGA monitor which costs about £150.

4. The multiplexer chip can be looked on as a traffic warden on the main circuit board. Its job is to direct information around the Falcon, thus freeing up vast amounts of processor time from the two processors. Combined with the 68030 central processor and the DSP56001 parallel processor, it makes the Falcon blisteringly quick and capable of true colour animations.

5. Yes, it has multiTOS fitted as standard. This is a fully-functioning pre-emptive version so if one application falls down the others keep going. Applications can run at the same time quite merrily, with the multi-plexer doing a lot of the work pointing data in the correct direction. What's more, the programs which are running concurrently can talk to each other, so, for instance, a communications program could feed

text directly into a word processor or vice versa.

6. Falcon has genlockable video modes. This means that you need to purchase add-on hardware to overlay computer graphics on video images. These are likely to cost about £100.

7. You can upgrade internally or externally – it's up to you. To upgrade the internal drive, you simply take the lid off, lift out the existing drive and then drop the new one in, you don't have to do any soldering or wire connections. If you connect an external drive, this enables you to access data more rapidly than the internal version.

8. No.

9. Atari are likely to redesign the case when they release the bundled Falcon in early '93.

10. As above.

11. Atari are going to start seriously marketing the Falcon early next year.

chip, a slow (compared to SCSI-2) IDE drive controller, and vastly inferior sound capabilities.

What should be emphasised from the very start is that Commodore's machine is very different to the Falcon; they are different machines and I doubt that they could be clumped together as a new joint 32-bit platform. Falcon is a multi-media machine, it has been designed to do new and massively promising jobs, hence the inclusion of the 68030 chip and the awesome DSP 56001. Commodore have decided to go for a much higher graphic resolution, though it's doubtful if the 68020 CPU is up to the job of displaying much more than static pictures in the higher resolutions. Of course, in the end it's down to the applications that emerge for each machine. Turn to page 8 for a news story that should dispense with all your worries about which is the more capable machine.

The simple fact is this: there are many tasks the Falcon can do which the A1200 couldn't begin to emulate – the only thing the A1200 seems capable of, which Falcon isn't, is displaying a picture in a slightly higher resolution with slightly more colours. I know which machine I'll be buying.

Vision on

I've got a complaint about your mag – you've gone and taken away the Gallery section. It was one of the reasons that I subscribed to *STF* and I believe that many others feel the same way as me. I can't believe that you didn't get any pictures from your readers, there are 69,000 a month, after all. So, please put the Gallery section back into your otherwise magnificent magazine.

Mikeal Folkesson
Sweden

stf: We dropped the Gallery section for two reasons. First, we were only getting about four or five disks a month. Second, the pictures we were getting were

always reproductions of pictures and, by and large, weren't very good. Now, if you would like to start creating some original pictures – that is, not poached from fantasy artwork books or birthday cards – and if we think that they are of publishable quality, then we'll consider bringing the Gallery back.

Slipped disk

My brother recently purchased *James Pond* from Special Reserve. Imagine my surprise, on examining the disk from GEM, to find *Lotus Esprit Turbo Challenge* on the disk as well – and a fully working version, no less. I examined the advert and *James Pond's* instructions, and found no sign that *Lotus* was included. If anybody out there has a copy of *James Pond*, check the disk – you might also be lucky and have a free copy of *Lotus*.

Joe Holmberg
Oxford

stf: Strange, indeed. The only freebie I can remember getting with a game was a rather tasteful mug when I bought *Midwinter*. Coincidentally, I still have both the mug and the game. Both give me equal pleasure, although the sight of the former wrapped around a mug of coffee is the most welcome the morning after the night before.

Caring Cadaver

Would you be so grateful as to pass this on to poor old Chris Keers, Surrey (*STF* 40) regarding dragon slaying *Cadaver* style. To slay any foul breathed reptile you need a pretty powerful massacre spell. This spell first appears as "Unknown Spell" and you receive it as a reward for dropping Lord Carolus (Or LC as he is affectionally known) on to his altar. Then you set about using your spell-casting abilities by casting the "READ MAGIC SPELL" onto the "Unknown spell" and, hey presto! you're rewarded with a most powerful massacre spell, capable of laying to rest even the most evil of fire spewing foes. Level Two is

even more challenging, but if you haggle with those awfully nice chaps at *STF* for back issues 21/22 – see page 58 – your frustrations will be relieved with the solutions to all of Level Two and most of Level Three.

Scott Carling
Edinburgh

stf: Well, that's the *Cadaver* problem solved. Which brings us along to another one. We've managed to destroy our copy of the most excellent *Warhead* – a game produced by the now defunct Activision. If anyone's got a spare they could let us have, we'd be jolly grateful.

Righteous rocker

In *ST FORMAT* 39, the "Make Some Noise" article says that rock and roll is dark and satanic. Says who? Rock came from the church. The chord sequences and rhythm

Rock chord sequences and musical form is derived from black gospel music

and musical form are the same as, or derived from, black gospel music, and Christian rock music is still very much alive and kicking.

I enclose a tape containing music from a recently formed thrash group called *One Bad Pig* (from their album *Swine Flew*) whose members are all born-again Christians.

The other side of the tape contains music from Larry Norman of whom it was said by Paul McCartney: "He would be as big as Dylan and The Beatles if he was not singing about Jesus. He also inspired the rock opera *Tommy*. Rock and roll came from the

church, Satan may try to steal it, but we righteous rockers are stealing it back. From one holy roller.

Matthew Billingham
Tyne and Wear

stf: Fair enough, the basis of all modern music is gospel music which originated in the States; nobody can argue with that. However, the vast majority of hard rock or heavy metal – or even thrash music – is deeply and utterly embroiled in whatever *Lucifer's* getting up to this millennium. I take the simple view that it doesn't matter two figs whether the music's religious or satanic, as long as you enjoy listening to it. Prince is constantly wittering on about God and it doesn't seem to have harmed sales of his records. Similarly, *MegaDeath* have sold lots of records off the back of *Old Nick*. I listened to your tape and, while it certainly didn't cause me to shriek out loud and stomp on it, I don't think I'll be nipping out to purchase records from either *One Bad Pig* or Larry Norman. But then, I sold my soul to the devil and he might get a bit upset.

Potty about balls

I am writing in reply to a letter in *STF* 40 by Stephen B from Cumbria concerning *Jimmy White's Whirlwind Snooker*. He complained that he kept getting slaughtered by Tom and some of the shots played by the ST were "impossible" even for a professional snooker player like Jimmy White. He says that the shot he played would actually go in on a normal table and that these shots bounce away on the game and leave easy shots for Tom.

Well, if he played the game more often and gave it a chance, then he would find that, with practice, he wouldn't get slaughtered and would, in fact, end up becoming very good. I have a whole set of wins against Dick (Level Two) saved to disk and I only bought the game four weeks ago.

Second, he must realise this is an ST game, not a "real game,"

TESTIMONIAL CORNER

Now's your chance to sing the praises of any company you think deserves it

HCS Engineering

I am writing to ask you to give me some well-deserved publicity to HCS engineering in London. The power supply unit in my ST blew up one afternoon. Over the phone HCS were courteous and helpful. They repaired and returned my ST efficiently and speedily, all for £60. This was all in stark contrast to the

experience I had with local shops – one placed quoted £100 plus fitting plus VAT. Another computer shop didn't even know what a power supply was!
Ian Thrilling

ST Direct

I feel it is necessary to recommend a firm that advertises in your superb magazine. ST DIRECT were advertising computer games at extremely low prices and I was wary of ordering from them after previously being stung

by other bogus, companies. However, throwing caution to the wind, I ordered *Colonel's Bequest*, *First Samurai* and *Midnight Resistance* from them. The Virgin Games Centre price for these three games amounted to £70.14, ST Direct's price was £15. While not the fastest of deliveries – just under two weeks – I wholly think a saving of £55.14 made up for this in every way. Overall, ST Direct deserves the highest praise possible.

Colin Bruce
Surrey

LETTER FROM ABROAD

Peace and unity, man

I don't think that anyone should knock anyone or any machine. Each machine has its own potential. Like human beings, machines have their weaknesses as well as their individual strengths. In my view, the ST keyboard cannot match the speed of the BBC or even the humble Dragon 32 for typing. I cut my teeth on the Dragon and I programmed the Dragon and the BBC for my students and, I have to say, the ST has a really crappy keyboard for anyone who wants to use it for typing.

I have another problem with games. I never buy games and rarely play them except for a couple of favourites like *Lemmings*, *Slug* and *Duckdash*. I hate complex games and the trivia. I can't do them. I don't have that type of mind; even *Kings Quest 1* is too hard for me. One of my biggest niggles with games is that, once you have completed a level, it should be finished, done, that's it. But no, you have to struggle through five

levels and then if you die you have to go through them all again to get to the same point. That's when I switch off.

PK Sharpen
Rockingham, Australia

stf: The BBC micro did indeed have one hell of a good keyboard on it. It was one of the computers I learnt to program on too, but then it had a particularly good BASIC built-in which meant that learning the basic building blocks of programming was a joy rather than a chore.

I don't think your point about games is particularly valid though, plenty of games have restart points built-in and if you could just keep on carrying on from where you were last time there'd be no challenge. It's fair enough if you're not particularly into games, but if you buy games for a challenge you'd soon be massively dissatisfied with a game if it was too easy.

so he can't expect every shot to be precise. Again, with practice, he will be able to pocket nearly every shot he plays and amass big breaks. I have a whole disk full of breaks above 20, not that I'm bragging. So, come on, Stephen B, give Archer MacLean a break; *JWWS* is an excellent game from an excellent programmer and I can't wait for *Archer MacLean's Pool* which is guaranteed to be just as good.

Chris Jones
Scotland

stf: Fair dues. I do feel we sometimes expect too much from games and their programmers. We ask that they're easy enough to finish (but not too soon), hard enough to provide a challenge (but not too hard) and large enough to provide plenty of long term value (but not bewilderingly large). The programmer is left with the formidable task of pleasing all the different kinds of game players, from those who're happy to sit down and conscientiously read the manual to those who never read the manual and get annoyed when they can't work out the controls. Whirlwind Snooker is a tricky game, but if you put the initial effort into learning its control methods you'll get plenty of long term enjoyment from it.

Any fule knose

I am writing to warn your readers of a hideous new disease which is spreading like wildfire among the population, and which has now managed to find its way onto computer software. It is perhaps not quite as dangerous as the computer virus, but is definitely more insidious. I refer, of course, to the Grocer's Apostrophe.

The Grocer's Apostrophe began life as an innocent enough insertion on a greengrocer's sign to give "potato's". From there it spread, maggot-like, to the "avocado's" and then, alas, even to the "onion's." The rest is history.

It is one thing to see bad grammar on a hastily written sign but more galling when hand-painted impeccably on the side of a van ("Piano's moved") and worse still in print, whether on the page or on the computer screen. *Calamus* and *Supercard* are both offenders which spring to mind but who knows where else it lurks in as yet unopened windows or Alert messages in other programs.

For those of you for whom English lessons are but a distant memory, let me briefly remind you of the rules: the single apostrophe

is only used to signify possession (as in "Grocer's Apostrophe") or missing letters ("He's forgotten already"). It is never used just in the plural. This includes "Classical CDs" and "The Swinging '60s" and

lem has) always been spelling Kalaalit Nunaat correctly.

Still seeing stars

Having ignored *Astrocalc* in *STF 35* (interesting Astronomical calculations, file under Entertainment) I thought Tom Rees's letter on this (*STF 37*) took it too seriously – although I concurred with his sentiments. Then came *STF 39*. Ignoring the ramblings of Phelin Lunny (pronounced Loony, perhaps?) as new age mirth, I must answer the worrying rubbish of Phil Wilcox. Since he gives no reference I cannot comment on "scientist" Michel Gauquelin's work – but the charge of scientists' generally closed minds is simply prejudice. Let us look at some facts:

1. Astrology has been around for about 3,000 years.
2. Astrologer's horoscopes today (reproduced by *Astrocalc*) include the effects of the sun, moon and eight planets.
3. Of these eight planets, Uranus was discovered in 1781, Neptune in 1846 and Pluto in 1930.

Modern astrology must have quietly rewritten its rules to include these discoveries – thus we can at least dismiss all horoscopes cast up to 1929 since they must have omitted "Regeneration, rebirth, underworld, crisis and obsession" (the purported effects of Pluto) at the minimum.

But why is our future dependent on the immediately visible heavenly bodies which make up the solar system? What about the

effect of the asteroid belt, the 53 "moons" of the other planets, the tenth planet (inferred from anomalies in Pluto's orbit, but not yet identified) or even the nearest stars (Proxima Centauri)? Further, what about competing systems of divination based on principles completely separate from (Western) astrology, such as the Chinese horoscope? What if I am born under the sign of the bull (Western) but in the year of the rat (Eastern)? (Rhetorical question, no replies please!)

In fact, astrology plays upon people's fear of the future and need for reassurance. Rationalism has led the flight from religion (in particular Christianity) in the west, but has left us with the conclusion that we alone are responsible for tomorrow – an altogether terrifying prospect for most of us. Thus many look for some "force" to be still in control of our destinies.

To conclude, if what you want to do is base your understanding of yourself and the universe on the 3,000 year old ideas of spin doctors speaking comfortable words (and quietly updated when science identified gaps in astronomical knowledge) then you are at least three satellites short of a solar system.

Dr Neil Harvey
Derby

stf: That's all pretty much on the money. Do you think irate believ-

From there it spread, maggot-like, to the avocado's

of course "potatoes." A particularly common mistake is to confuse "its" with "it's." The first is possessive ("on its own") and the second is simply an abbreviation of "it is."

Does it really matter? Well, not much, in the grand scheme of things, I suppose. It's just a bit annoying, that's all.

Greg Chapman
Twickenham

stf: Or at least, annoying enough to cause you to write to us and put the record straight. I'll agree, use of the apostrophe has got somewhat out of control, but I sincerely doubt that it's anything new. In fact, I asked my dad (30 years as an English teacher) and he reckoned that the English have always had some trouble with the usage of "its" and "it's." Personally, my big problem's ("problem's": short for prob-

ers in astrology attacked their astrologers in 1929 after the scientists discovered Pluto? Do astrologers offer money back guarantees if things don't quite pan out and new planets suddenly appear without any prior warning? Did those astrologers manage to predict the discovery of Pluto? Did they blush? I don't know, it's all a bit silly really, isn't it?

I mean, my stars for today tell me to expect friends to turn up out of the blue with their kids and it then advises me to put my feet up and enjoy a selfish treat. Like reading my stars, perhaps? I think I'll stick to my fortune-telling fish which you cradle in your hand and wait for a reaction.

Hard work

I'm worried that people who could find the *Workout* program (Public Sector issue 41) helpful may be misled or put off. So may I point out that to use *Workout* does not need any organising or planning at all, or even much thought. It is not a revision planner as the review claimed, but more an electronic exercise book, a content-less program like a word processor or a database. *Workout's* prime use is to keep and help you get to know your worknotes as you go, so taking the hard slog out of learning. The revision aid aspect so emphasised by the reviewer consists only of extra practice runs of the notes you have already made, and speaking the answers instead of typing them.

Workout is simple and quick to use; all you are expected to do is enter your scribbled lecture notes and textbook examples into *Workout* instead of into an exercise book when you come to write up your notes in readable form at home after each session. If you are studying at home, you won't have any paper notes at all; you enter it all direct to disk.

Workout is not ideal for quizzes or puzzles, as was advised by the review (though they are possible) because it does not provide a reward system but just simple scoring to compare your previous work. The program is primarily designed only for its job of making the process of learning easier, and is best at this, though it can also be used by teachers to set tests for other people.

Perhaps the many sample files included gave the reviewer the impression that work-planning was needed, but these are only examples (as when you get samples business letters with a word processor, or STD codes with a

database). Their aim was to show it is not only useful for learning vocabulary lists, but has much wider applications, and they can be ignored or scrapped if you don't want them.

Norma Wrangham
Halstead, Essex

stf: We're always pleased to let everyone have their say. Clive Parker, who reviewed the program, was slightly misled by the sample text files included with the program. Having said that, Clive said in his review that it's probably best for those kind of people who are capable of forward planning. If they're anything like me the chances of class notes getting written up into a slightly more comprehensible format are minimal at best. Still, if you can conscientiously stick to this kind of procedure then I'm sure it would be extremely useful.

Bullied by wallies

I am investing in a Falcon030 because of its speed, graphics and sound capabilities as well as other technical specifications. Many of my school friends own that other 16-bit machine and occasionally gang up on me when we're talking about computers or when we're bored. Since I'm the only one with an ST, it's hard to actually win any of these slagging off matches.

Anyway, when I heard about the Falcon I told them about it and they all went a bit quiet for a while, a few mumbblings were heard then one of them said "Yeah, but the ST's still crap." Then it stopped because they were totally out of ideas. They were so eager to get me back they started to find any news they could about Commodore's latest developments. Then they started going on about the new A4000. They were very tight on details of specifications - the only thing they knew about it was that it has 16 million colours. Is this true?

I have already seen a few adverts in your mag for Falcons. If I get one now what software comes with it? Should I wait for the new design or maybe the CD version? How much better is it than the SNES, is it capable of 3D scaling, scrolling and rotation capabilities?

Paul Verity
Ilford

stf: The new Amiga 4000 costs £2,100 and therefore any comparison between it and Falcon is absolutely pointless and totally ridiculous. If Atari had decided to flog Falcons for that kind of price,

then it would have a specification to make not just the Commodores but everything up to graphic workstation standards look crap.

Falcon costs £499 now and by March Atari will have released the 1MByte version for £399. Later in the year it is to be joined by the Falcon040 (priced around the £1,000 mark). Both these machines

Both (Atari's) machines are a match for any of Commodore's and are decidedly cheaper

are a match for any of Commodore's and are decidedly cheaper. The single item of specification which the A1200 (the only Amiga to which it's fair to compare Falcon) has that is better than Falcon's is the fact that it has 16.7 million colours compared to Falcon's 262,152.

Falcon has a far better processor (the 68030 to the 1200's 68020), a higher clock speed (16MHz to the 1200's 14.3MHz), an FPU socket, a 256 byte data cache, a memory management unit, more capacity for internal RAM (14MBytes to the 1200's 6MBytes), true 16-bit true colour (the A1200 can only have up to 8-bit planes), true 8-bits per pixel graphics mode (the A1200 mostly uses inefficient hold and modify mode), a higher effective resolution (the A1200 HAM mode can take up to three

pixels to change from one colour to the other), 16-bit stereo audio with 256 times oversampling (to the 1200's 8-bit), eight playback channels (to the 1200's four), eight channel 16-bit stereo record (to the 1200's zero channels), a hugely powerful DSP chip, a SCSI-2 port, a DSP/DMA port, MIDI ports and a local area network connector.

Now you tell me: which is the better computer?

Farty Karate part 2

While reading *ST FORMAT* 41, I noticed the letter titled "Farty Karate" from J Williamson in Harrogate concerning the game *IK+*.

I also have this game, played on a 1040 STE and have found the same problem. The program does actually run but you have to be quick. When it loads, immediately press either the <Fire> button or F1 for one player or F2 for two players, then the game runs normally. When you've finished the flight, though, you must play again or it crashes with the message "bum copy." This solution's not brilliant, but at least you get a go.

Steve Boulton
Cirencester

stf: Cheers, Steve for that helping hand, it's good to know that there's someone out there who has managed to find a solution to this seemingly irresolvable problem.

■ If there's anything that you want to share with 70,000 others - however remotely connected to the world of the ST - write to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. You could even win yourself some money!

WHERE TO WRITE TO

Feedback

To share your point of view with everybody else who reads *ST FORMAT*, address your letters to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Games tips or queries

If you want to share your cheats with us or if you're really stuck in a game, write to our new Games Writer. Address your letters to Rob I-can-help-you-out Mead, Gamebusters, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Technical problems

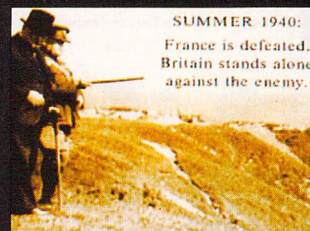
You need our team of ST Answers experts if you've got a

techie problem about hardware, software or your ST. Equally, if you've got a really handy tip that we want to publish, you could win yourself some dosh. Write to ST Answers, ensuring that you mark your envelope with the nature of your query. The address is *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

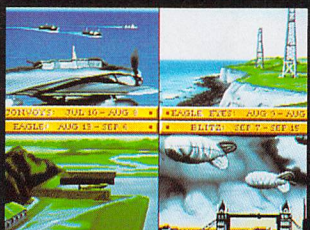
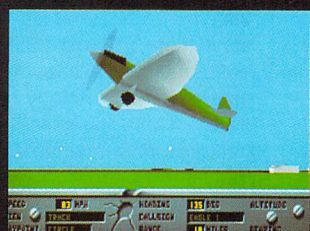
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REACH FOR THE SKIES



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Britain stands alone
against the enemy.



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Programmed by the team that brought you "Flight Of The Intruder", the definitive 90's flight sim, Reach For The Skies exploits the same unparalleled technology and reaches new heights of historic realism.

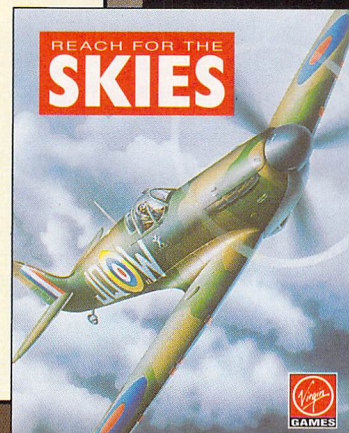
- Re-live the crucial days of the battle as controller, pilot or gunner.
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Available on PC and 100% compatibles, Atari ST and Amiga.



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VIRTUALLY REAL

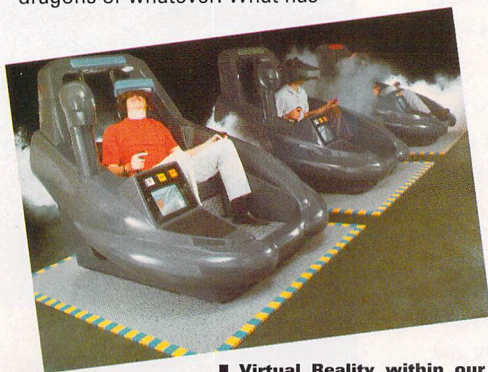
■ Now that is some peripheral - pity you need a small extension to house it. *Lawnmower Man* was billed as the first Virtual Reality film and featured a fictitious Virtual Reality setup that is only a few years away.



Cyberpunk, alternative worlds, fantasy amplifiers and silly hats. Virtual Reality is here - virtually anyway. Chris Lloyd is in a graphics co-processor being harassed by several large pink pterodactyls

Is the real world getting you down? How about living in an alternative reality then?

That's the promise of Virtual Reality, the latest thing to send Californians into a tiz and reel out "this will revolutionise all our lives" statements. Technology has now made it possible to swamp the senses with a digitally recreated slice of someone else's imagination. In its crudest form, most ST games offer Virtual Reality; you play an interactive role within an ST-generated world, a Formula 1 driver, a slayer of dragons or whatever. What has



■ Virtual Reality within our reach and doing what it does best - entertaining. These linked machine put all the players in the same 3D game world. Brilliant fun even if you do look a bit of a prat wearing the gear.

made people excited to the point of inventing a new term to focus the hype on are the possibilities when you interface yourself with more hardware positioned closer to your senses. Forget a 12-inch monitor a few feet away - how about two high res screens a few inches from your eyes relaying a stereo image and filling most of your field of vision? Add an intelligent sound system, force-reflecting control surfaces, and a suit that monitors your movements and gives tactile feedback and you're suddenly right inside the computer-generated world. The 3D display moves with your head, hands move with yours and you can hear, see and feel things that live only in the Virtual Reality. You can explore landscapes that don't exist, take tea with creatures that aren't alive and exercise the kind of environmental control that was previously reserved for the divine.

3D databases

Scientists can walk inside 3D databases and models then structure data directly; architects can wander around proposed buildings, doctors look inside you using a 3D picture built from ultrasound images and gameplayers get the time of their lives. The possibilities are astounding; there's a whole new dimension offering experiences only science fiction writers had thought of. As with all barrier-breaking technol-

ogy, it has its fair share of critics, crackpot hypotheses and visionaries. And as with all media, the possibility for abuse exists; the only difference being one of scale. Watching a film is one thing, actually being part of an intelligent interactive scenario is another. Such a sensory immersion can tap deeper into the conscious and unconscious mind of the participant.

Undergoing research

Virtual Reality is still in its infancy and all the best systems are still in the research labs. As you might expect, the military and space agencies have been hard at work. The US Army has tank and flight simulators where the crew sit in copies of the real thing mounted on hydraulic platforms. The world outside is reproduced by high definition graphics. The systems are linked so crews can battle it out together - they don't even have to be in the same country. Everything is orchestrated to reproduce an environment so that crews can rack up training and destroy millions of dollars worth of virtual hardware without anyone getting scratched. NASA is developing remote control robots where the controller wears stereo glasses and operates force-reflective arms to simulate what the real robot arms are up to. The US Marines have a similar remote controlled robot, only this one packs machine guns to mangle people's bodies

BETTER THAN LIFE?

With a bit of imagination you can picture a world where Virtual Reality has replaced the real thing - people living in a reality that can change every conceivable law of physics and provide incredible adventures for everybody. Space travel and time travel - anything you desire, really - you can be anybody and do anything. In a way it sounds too good

to be true yet, at the same time, strangely sinister since the only people with any power would be those who were in control of the network. There has been a lot of hypothesizing on the possibilities of Virtual Reality; they are certainly going to be spectacular in much the same way that motion pictures must have been when they first appeared. There

are always people that are unable or unwilling to cope with the reality of life and retreat into a fantasy world of their own. Any addiction to Virtual Reality would be a symptom rather than a cause of this. For the majority of well balanced individuals it will remain an entertaining and interesting diversion - there is nothing quite like the real thing.

COMING SOON!

Virtual Reality may be in your hands a lot sooner than you think. There are strong rumours bounding around in the ST world that the new Atari console, the Jaguar, is to come packaged complete with a pair of goggles - that's a visette, apparently. These visettes would enable you to see what's on your screen three dimensionally - rather like the effect those red and green lensed sunglasses have. Interactive Virtual Reality games, here we come - be prepared to make the current crop of Italian hedgehogs look like dinosaurs.



■ **Virtual Reality on your ST.** Games like *Thunderhawk* put you at the controls of a nonexistent helicopter in a nonexistent world filled with imaginary enemies. If you want to escape from the stresses of reality, this is where to come.

while the operator lives the experience within an electronic recreation of the scene – a highly dubious development. The University of North Carolina has a system called ARM where 3D molecules can be manipulated with a special arm in a virtual world, the laws of the physical world are represented by graphical changes in the image. Chemists can test whether molecules will bond or not without laborious lab tests.

Development is racing ahead in various areas in research and development establishments around the world. As the costs come down and the skills gather momentum it should escape from the labs and find its way into your home. The next generation of consoles and home computers could well come with goggles to take you right inside the programs.

Hurdles

There are several technological hurdles to overcome before Virtual Reality becomes what its supporters are aiming for and starts to approach a truly believable illusion. Digitally reproducing reality is a mammoth task even for the most powerful machines; it consumes all the processing power you can throw at it and getting smooth and realistic graphics is still a problem. Displaying the image is reaching the edge of technological ability, too. Even the highest resolution CRT or LCD monitors look coarse and grainy when they're inches from the eye. Tactile response can be simulated using a matrix of electrical contacts passing variable voltage currents to the skin or in a more direct method using pneumatics or similar. Each system still means wearing a special suit. Even with the best visual and audio input, the mind isn't going to be fooled unless it can physically feel movement. Various methods have been tried: tread-



■ **All games using first person perspective offer simple VR.** You view the game as if you were there. *Cybercon* has a fast 3D polygon world of doors, traps and nasty pieces of work. Presently as close to Virtual Reality as you can get on an ST.

mills, roller skates and powered platforms. None can reproduce real feelings, but the effects can be realistic. In the end though, no artificial alternative reality can ever approach the real thing.

Taking things a step further, how about bypassing all the clumsy electronic and mechanical systems and squirting the data straight into your central nervous system? You would live the experience much like a dream – don't you think that's seriously freaky? It's certainly not outside the bounds of reality. The sociological and cultural implications are huge. As it stands, people are already prophesying great changes in the way we live. Not only shall nation speak peace unto nation, but they will be able to shake hands in a Virtual Reality. Instead of just viewing other cultures and environments, we will be able to experience them much more directly.

Virtual Reality games

One of the more obvious and certainly the most entertaining possibilities for Virtual Reality is in games. There are already Virtual Reality systems up and running in arcades offering multi-user games where you pilot jets, drive cars or hack and blast your friends in various vector



■ **With 3DCK you can create your own alternative world built from objects and manipulated with a simple programming language.** You are then free to wander round bumping into things for yourself. Virtual Reality, in a fairly crude form, on your ST.

graphic worlds. You think turning down all the lights and getting really close to the screen to play F19 is a buzz, how about sitting in the cockpit and looking over your shoulder to see the incoming missiles? A British company called W Industries have produced the world's first and best selling Virtual Reality entertainment system giving everyone the chance to experience Virtual Reality at big arcades like the Trocadero in London. Future plans include much smaller and lighter head mounted devices and a tie-in with Paramount Pictures to produce a Virtual Reality game based around *Star Trek*. Give it time and these sorts of Virtual Reality game systems will appear so you can play them at home, even linking them over the phone system for multi-player games. The games will blow everything that's available at the moment out of the water.

Virtual Reality has been hyped as something that can shift the realm of human experience – quite a claim to make. It will undoubtedly have a significant impact. Like all pieces of technology, however, it is just a tool – it's what we choose to do with it that, in the end, makes the difference. **stf**

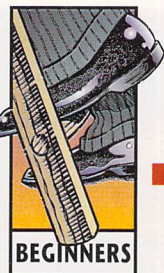
■ **Lawnmower Man** features some er, interesting uses for Virtual Reality. Better than the real thing. Well, perhaps.



BIG BIRD

Serious Virtual Reality needs plenty of serious processing power – at the least a good fast processor, multi-tasking and high resolution graphics and sound. The Falcon has the kind of processing power you would need to get a Virtual Reality system running. Then you need a set of 3D goggles to provide you with a 3D window on the world as well as a pair of headphones to give you full stereo effects linked to the graphics. And how about a glove to give you virtual hands to use

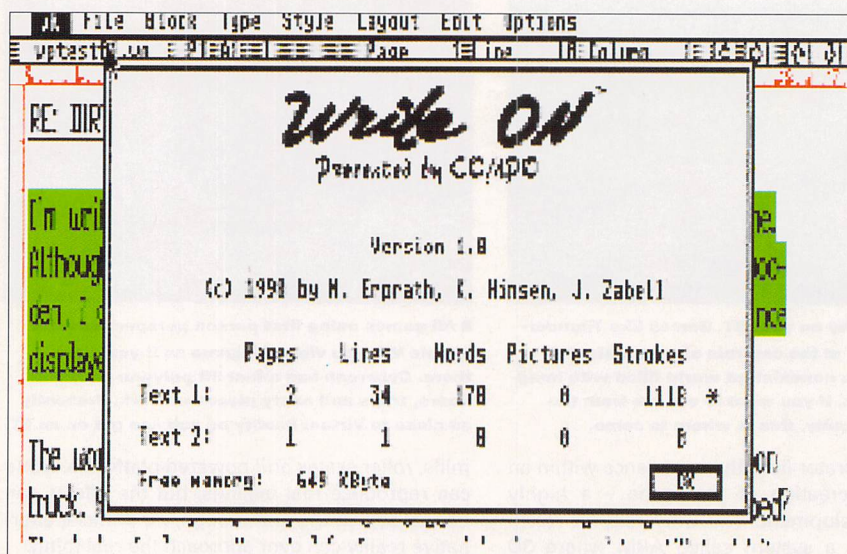
objects and control things? With its DSP chip and video processing capabilities, Virtual Reality isn't that far out of reach. Imagine yourself moving around a dungeon in full 3D, cautiously edging around a corner only to have a slimy thing leap right out at you screaming ferociously. Games would take on a whole new dimension that could have you leaping behind the sofa to avoid things. Agh!



DO THE WRITE THING

Whether you want to write a novel, send a letter to your bank manager or blitz your fellow citizens with junk mail you can't beat a word processor.

Rob Mead ties a typewriter around his neck, puts his bicycle clips on and jumps into the lexicon of love, quiff and all...



■ The Write On
On screen enables you to see how your document is progressing. It tells you how many lines, words and keystrokes your document contains, but not how many slanderous comments or hanging particulates.

Over the last few months we have given away two top-flight word processing packages on our Cover Disks. First came *Write On* with STF 33 – turn to page 58 to order your copy if you missed it – and last month we gave away *Protext*. However, the packages are very different from each other and can be used for very disparate purposes – it all depends what your needs are.

In a business environment you are likely to be using your word processor for everything from letters to company reports and mail-shots. Naturally, you want a sophisticated package that enables you to produce professional-looking results and is going to be compatible with other office software – desktop publishing packages, for example. In a domestic environment your needs are likely to be much simpler so you want something which is going to be easy to use and can produce good results with minimum fuss.

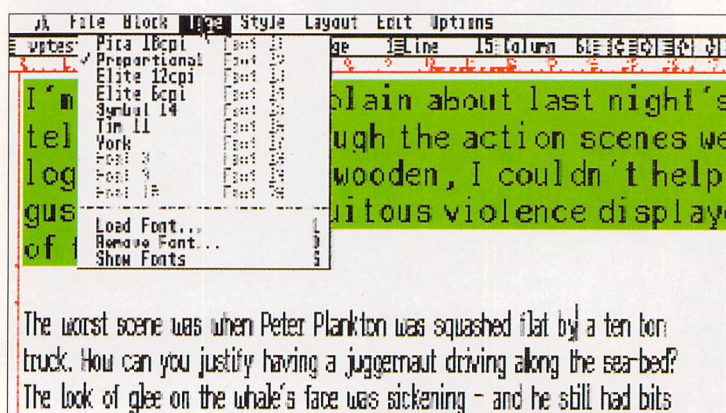
Right on, home boy

Write On is the little brother version of *That's Write*, the professional word processing package and originally received a rating of 90% in STF 22. Although it has a limited range of features when compared to *Protext*, it's still sophisticated enough to enable you to produce great-looking documents. One major advantage it has over *Protext* is its WYSIWYG (What You See Is What You Get) interface. WYSIWYG enables you to see text effects – bold, italic and all the different typefaces – on-screen so you have a good idea

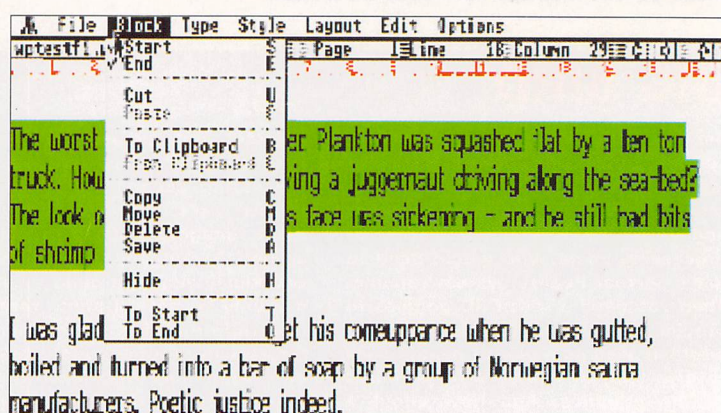
what your document is going to look like when you print it out. If you're new to word processing this greatly simplifies the document creation process and means you don't spend all your time getting bogged down in command lines and special keys – you simply select the option you want from menu bar and apply it.

Write On has all the usual word processing functions – such as Search and Replace, Cut, Copy, Paste and document formatting. There's even a mail-merge facility, so you can print out loads of begging letters and send them out to the world's richest pools winners. You can also install up to 20 standard ST GEM fonts, which can be selected from the Type menu. However, creating fonts in *Write On* can be fiddly and it's a good idea to invest in a package like *Fontkit Plus 4* (£24.95 from the ST Club ☎ 0602 410241) or *C-Font* (£9.99 from Compo Software ☎ 0480 891819) which converts .CFN fonts into GEM format. Another useful feature is the page and paragraph layout function which enables you to change the way your document looks – this is useful for creating tables and letter formats and means you can assign style sheets to your documents rather like you can with a desktop publishing program. You can also include .IMG pictures in your document, so you can either create your own images in a paint program or import others which have been created already.

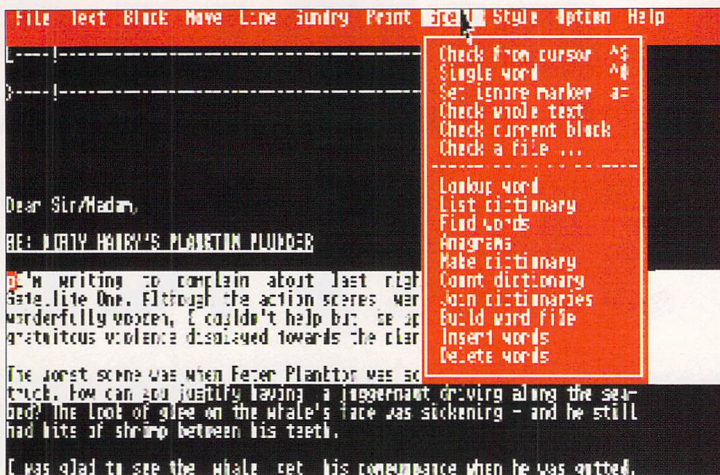
Printing with *Write On* couldn't be simpler since it creates its own printer driver – WRITE_ON.WOP which works with most types



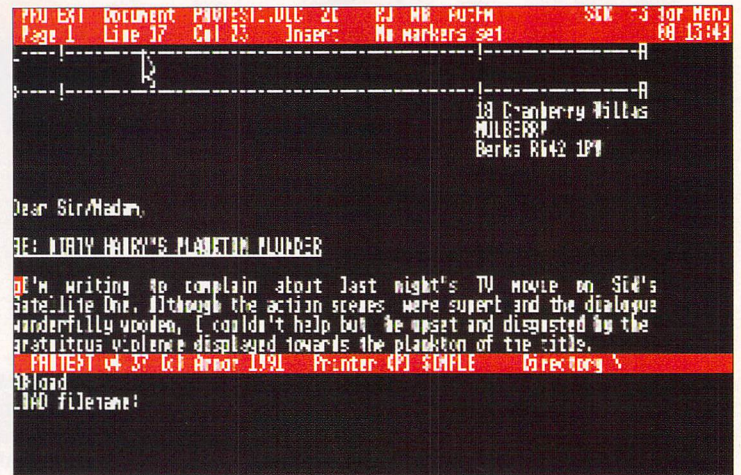
■ You can choose up to 20 fonts from the Type menu and with the WYSIWYG interface you can actually see what they look like on-screen.



■ Write On offers you many text manipulation functions and enables you to cut, copy and move blocks of text to different parts of your document.



■ Pay £20 for the full version of Protext v4.3 and you get a comprehensive spell checking utility. Ignore markers can be inserted next to words you don't want the utility to check.



■ To toggle between the Edit and Command modes simply press the <Esc> key. Command mode appears in the bottom third of the screen and can be used to save, load and print files.

of printer. Compo Software also produce additional printer drivers for use with Amstrad and Canon printers.

Unfortunately, *Write On* lacks a thesaurus or a spelling checker, although it's possible to get one if you fancy upgrading to *That's Write* (£50 from Compo Software). You have to register your copy of *Write On* with Compo Software first, though, for £15. *Write On* also uses a lot of memory and this could mean you could run into problems trying to manipulate or save your text.

Professional wordsmithery

STF 41's Cover Disk featured a copy of *Protext* v4.3, with an option to upgrade to v5.5. *Protext* is very possibly the best word processing package you can get for your ST, and it received a massive 95% in *STF 31*. *Protext* is very powerful, very fast and comes packed with a mass of features which make it perfect for professional or business use. It's especially good at coping with long documents, which makes ideal for company reports and so on.

Although *Protext* shares a click-and-point menu interface with *Write On*, it also includes a

Command Mode option and a host of keyboard shortcuts to make getting around your document easier. It can take a while to get to grips with this alternative way of working and, for the beginner, the sheer quantity of options and commands can be bewildering. *Protext* also lacks a WYSIWYG interface, with many of the text effects displayed in terms of command codes embedded in the document – for example, you can't see how a font looks until you print it out. However, there is a PRINTS com-



■ The Help menu contains comprehensive information about *Protext's* options and command lines.

mand which enables you to check the page layout – and this is especially useful for performing mail-merge operations.

While *Protext* isn't the most user-friendly word processor in the world, it certainly makes up for it with some extremely useful features. For example, the multi-lingual spell-checker option enables you to use a number of different dictionaries to check your document (a very popular feature for all you language students), while the Box and Line draw options enable you to customise your documents by separating off parts of the text. It's even possible to print text in multiple columns.

The text block manipulation functions are comprehensive – as well as all the normal word processing options, you can swap characters, change text case and whizz the cursor around your documents, virtually at will, using the keyboard shortcuts. Window scrolling is also much more fluid than the stolid GEM-like environment used by *Write On*. Finally, there are also a host of printer driver options, which enable the user to send output to either serial or parallel printers. **stf**

THE WORD IS DTP

Although the facilities in many word processors are becoming increasingly sophisticated, there are now a number of desktop publishing (DTP) packages which offer text editors as part of their setup. Obviously, you are not going to get the same level of functions in a text editor as you can in a fully-fledged word processor and it's often easier to generate text outside the DTP environment, then import it. Still, here's a brief look at the best DTP packages with a text-editing facility.

Calligrapher

MACHINE: ALL STs WITH
1MBYTE OF MEMORY
PRICE: £139 (JUNIOR VERSION
£69)
FROM: WORKING TITLE
CONTACT: ☎ 0865 883233

Calligrapher is a word processor that thinks it's a DTP package. It's armed to the teeth with fonts, dictionaries and mail-merge facilities, and you can even import graphics or create tables and flow diagrams with it. In text-only mode scrolling is fast, but not as fast as a true word processor like *Protext*. Oddly, there's no overwrite func-

tion, so changing your text can get a bit frustrating. *Calligrapher* also has a penchant for creating new rulers at every possible opportunity and turns your on-screen page view into a jumble of different text blocks. Despite these pitfalls, *Calligrapher* is a very good package and a cut above your average word processor, ideal if you want to create the occasional complex document but don't want the expense of a DTP program.

STF Rating: 89%

Calamus SL

MACHINE: 1MBYTE AND HIGH
RES MONITOR.

4MBYTES RECOMMENDED

PRICE: £587.50
FROM: HALCO
CONTACT: ☎ 0734 441525
Calamus SL is one of the best DTP programs for your ST and features an excellent built-in word processor, *Pks-Write*, as part of its makeup. It's very quick and easy to use and features the majority of functions found in proper word processors. It does lack more sophisticated functions such as a spell-checker or word-count option, however. If you do more desktop publishing than word processing, this could be the option for you

STF Rating: 89%

PageStream 2

PRICE: £199
FROM: SILICA
CONTACT: ☎ 081 309 1111

PageStream is another top of the range DTP package with text handling facilities. Although there's no pop-up text editing window like in *Calamus*, you can toy around with the text just like you can with a word processor. *PageStream* has hyphenation dictionaries, a spell-checker, paragraph and line manipulation facilities and, of course, a large number of fonts. But, then you expect that with a DTP package, don't you?

STF Rating: 95%

THIS IS A PUBLIC SERVICE

This month Paul Hughes looks at a way in which you can use your DTP setup to actually earn some money. It's unlikely to make you rich overnight but, follow these guidelines and it could provide you with a regular supplement to your income



Who needs a broadsheet?

The word broadsheet is not to be confused with the type of broadsheet you would find in the newspaper publishing world. The publication you're going to learn how to create is simply an A4 sheet, printed both sides, carrying advertisements. If you live in a town or a village then there are likely to be many people who will find the broadsheet invaluable. The many business people who live locally who need a way of advertising their service or product. To regularly advertise in newspapers and magazines is expensive and quite often well out of the reach of many people. Just think of the many home-based businesses that exist like picture framers, book keepers, taxi drivers, accountants, artists, mechanics, plumbers, electricians and the like – there's loads of potential for filling your sheet.

For example, if your car/washing machine/microwave/television or whatever breaks down, then wouldn't life be easier if you could pick up your local broadsheet and locate the service you require from someone who lives in your area? Horrendous call-out charges may not exist if you use someone who lives locally. The whole concept of the broadsheet is about providing a service to the local community and, at the same time, putting some money in your pocket.

Getting started

1. Restrict the entries to one per category. If, for example, you carry an advertisement for an electrician then he should be the only electrician

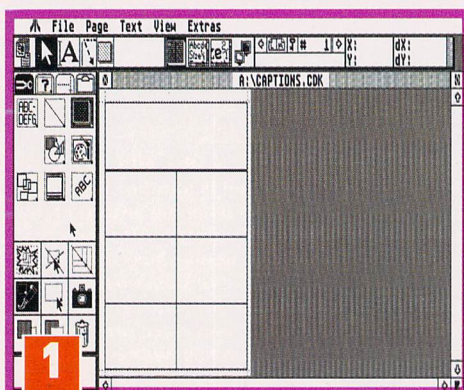
in the broadsheet until he drops out. This makes selling the ads far easier. If someone believes his ad is to be the only advert for a particular service, this is likely to encourage him to book space before the competition gets in. Category restriction is quite common which explains why you should not worry too much if a broadsheet is already operating in your area. If you happen to personally know three plumbers in your area, and are worried about who to approach first, then write a letter to all three explaining how this works and put the ball in their court.

2. Begin by running it on a monthly basis.
3. Try and use local advertisers where possible – after all, it is a sort of community service that you are providing for you readers.
4. Stipulate a minimum booking of three months and insist on payment with the order. Don't bank any money until you are sure of getting enough advertisers to make the project viable.
5. Stick to two box sizes; if your broadsheet grows beyond an A4 sheet, you may then consider charging by the vertical column centimetre as newspapers and magazines do.
6. Gain some experience first. Offer to do all artwork free of charge. Generally, for this type of publication, clients won't be too upset if you can't match their existing artwork exactly, especially if it is produced free. A hand-scanner is indispensable for this type of work.

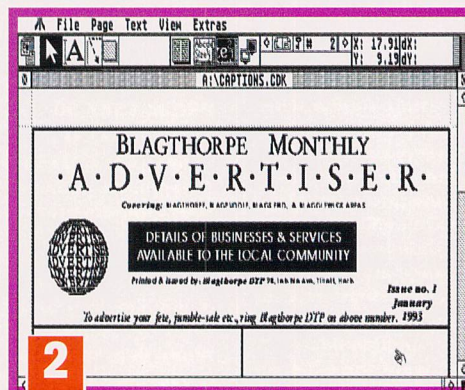
Selling space

When trying to sell advertising space in your broadsheet, remember that you are providing a service. If people take out an advert they should

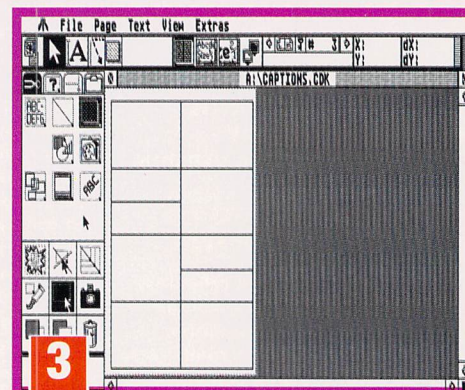
STARTING A BROADSHEET



FRONT:
Start by laying out nice symmetrical equal-sized boxes as shown, not forgetting to leave a space at the top for your own details.



2
Now fill in the necessary details explaining what the broadsheet is all about. Don't forget to put your own contact number and address.



BACK:
The layout on the back is the same other than adding half-sized boxes as necessary. Put these in as you sell them.

ANNOUNCEMENT

not feel they are not doing you a favour – it is the other way round. In fact, they should feel honoured that you have approached them first, and not one of their competitors. If all goes well (and with a following wind), people should be asking you if they can place an advert.

A good source of potential advertisers can be found in shop windows where you can advertise on postcards because many of the services are slightly unusual nature which makes for more interesting reading. Obviously, it is very useful to have electricians, plumbers and the like in your broadsheet, but try and source some interesting occupations such as a hypnotherapists, dog groomers, nappy deliveries, that sort of thing. Too many ads for personal massage followed by a very physical description of the potential masseur could, however, give your broadsheet a reputation you don't want.

What to charge?

The large boxes shown below are about 10 x 7.5 cm. An average price for this size of box would be around £10. A half-box would usually sell for around £6. You could also offer an incentive whereby the first six advertisers to book for 12 months would pay for only ten months and would also be guaranteed a box on the front cover. It is also a good idea to leave an empty box for your own advertising, for example, "This box costs only £10 per month."

Distribution

Before you sell any space, it is a good idea to arrange the distribution of your broadsheet. If

you often receive leaflets with your newspaper then check this route out as it can be a very cost-effective way of distribution, although it is actually illegal for a newsagent to insert leaflets, flyers and the like inside newspapers – technically, the leaflet should be delivered separately. This is something that you should discuss with your newsagent, he'll be able to provide you with all the relevant information. There are dedi-

**Too many ads for
personal massage
could give your broad-
sheet a reputation you
don't want**

cated leaflet distributors around, but the cost incurred is likely to be too expensive.

How many to print?

If your newsagent is delivering for you, then the size of the print run depends on the size of the delivery round. On average, try between 500 to 800 in a village environment and the same per newsagent for a small town.

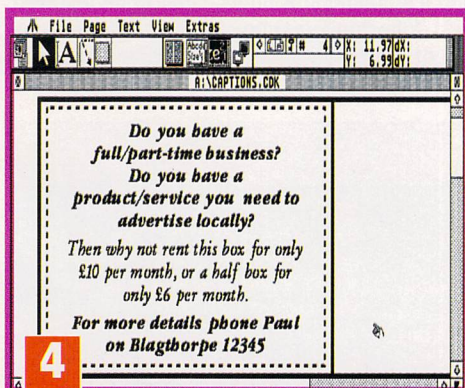
What printing method?

If you can produce laser or ink-jet printed masters, and have access to a photocopier, then this

is an ideal method of producing a professional-looking broadsheet. Remember, you are producing a leaflet so there is no reason to go through any ultra-expensive print-process to achieve a good polished product.

Commitment

When you take money from advertisers it is important that you honour your part of the bargain, sticking to the deadlines and volumes specified. If the advertisers don't get any response from your broadsheet, then they're going to seek out an alternative method of advertising. So, in general, the higher the number of broadsheets you produce, the better the chance of a good response rate for your advertisers. If you have a local garage, shop and pub, then ask them to display a small quantity on your behalf, say 20 sheets each. Remember that every sheet someone picks up is a potential customer for you too. Finally, a couple of things worth noting. Although it might all seem a bit of a headache at first, when you have been up and running for a couple of months you are likely to begin to enjoy running your own broadsheet and your typesetting prowess will be dramatically enhanced. Many of your clients will be just like you, starting out on the risky road to business success and are going to need someone to produce their funky new corporate stationery. Give them a bell and see what transpires: "Now let me see, sir, was that 50,000 two-colour letterheads you said you required or just the 30,000 this week?" Stranger things have happened... **stf**



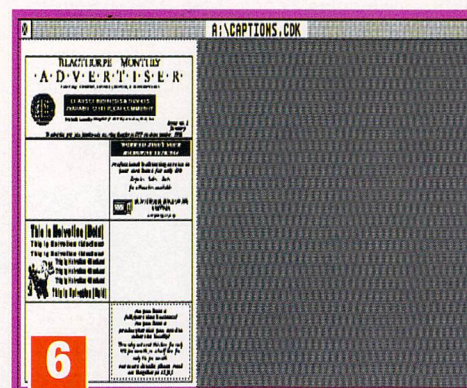
4

Try and reserve a box for yourself to continually advertise your service. This could also cover your DTP/print services.



5

Look through newspaper ads for ideas. Reversing-out (white on black) can be quite effective if used sparingly.



6

You are now well on your way to seeing your first complete broadsheet published. Try moving the adverts around to give a fresh look. Printing each issue on different coloured paper also helps.

WHAT'S IN IT THEN?

The world of TOS is crammed full of acronyms each controlling an aspect of your ST's operation. Here's the low-down on the main sections

BIOS: Basic Input/Output System

This is a collection of low-level routines that cover functions like talking to the keyboard, screen and printer and the disk drive at a basic level. BIOS is more difficult to program than GEM, but much faster since you miss out intermediary levels of operating systems.

GEM - Graphic Environment Manager

GEM has a fancy interface including drop-down menus, icons, dialog boxes, windows and file selector. You can call these from programs with the minimum of fuss. GEM is in two sections, VDI - Virtual Device Interface which provides low-level graphics and AES - Application Environment Services which handles the front-end business that you see on the Desktop. GEM uses the lower-level routines of TOS to do its work, it's not as fast as accessing these directly but provides a slick and familiar face on programs.

GEMDOS - Graphic Environment Manager Disk Operating System

This sorts out your disks enabling you to read directories, create or delete files and so on. GEMDOS also has some miscellaneous commands for talking to character devices like the screen and printer.

Line A Routines

Low-level graphics commands that draw on-screen, setting and reading individual pixels, including all text and software sprites such as the mouse pointer. GEM VDI uses Line A routines to draw

to screen. You can hit the hardware directly and gain a bit of speed, but you lose compatibility.

XBIOS - eXtended Basic Input/Output System

The next level up from BIOS, XBIOS contains a much larger set of instructions that are more specific to the STs hardware. They include handling the screen, the colours, vertical blanking interval and its position in memory, and the sound chip. It also handles the Multi-Function Peripheral chip which acts like a housekeeper and handles a variety of input/output tasks.

GIVING A TOS

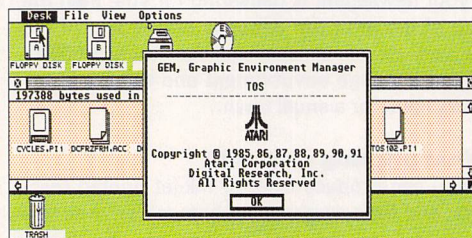
Your ST doesn't know anything, not a jot. Before you can do even the simplest task such as popping a disk in the drive and running a program, it needs something called an Operating System. This is a program that deals with all the basic running of your ST, telling it how to communicate with the screen, disk drive, keyboard and so on. One of the big pluses of the ST is that this program is stored on ROM chips - Read Only Memory, 192K of them. This means you don't have to muck about with start-up disks as you do with Amigas and PCs - you just switch on and go.

The ST Operating System is called TOS - The Operating System. It consists of two main sections, the higher-level GEM - Graphic Environment Manager, which deals with the familiar WIMP - Windows, Icons, Menus and Pointer. This is the environment you see at the Desktop and in GEM-based programs such as *First Word Plus* and the lower-level TOS functions which

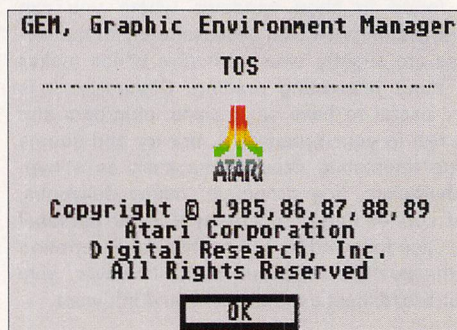
cover the more fundamental tasks of dealing with disk drives, screens and printers.

There have been five main versions of TOS on the ST, gradually improving the operation and speed of the ST. The first version was the cunningly-named v1.0. Each new version got a new number, 1.2, 1.4 and 1.6. A small bug in the STE's TOS which stopped STEs booting in medium resolution was fixed - it wasn't a major upgrade so Atari called it 1.62. Unfortunately, to fit the new longer number in, the way in which the number is stored was changed. This meant TOS 1.2 suddenly became 1.02 and some programs that read the TOS version got completely confused, recognising the new version as 1.98.

With each new version there were the inevitable compatibility problems. Programs which stuck to Atari's official programming guidelines had no problems. Many games and



■ The Mega STE got the rather swish TOS 2 with keyboard shortcuts, files directly on the Desktop, definable icons and a host of other tweaks that the replacement Desktops like NeoDesk boast. You can get the ROMs and plug it into your ST or get ROM sharing board so you can switch between your original TOS and v2.



■ If you get this box when you click on Desktop Info then you're packing the latest versions of TOS, that is 1.4 on an STFM and 1.6 on an STE.

Public Domain programs pay little regard to official rules and with each new version a few refuse to run. A great fuss was made with the release of the STE about compatibility problems - in the end there weren't that many difficulties and all the main packages that failed were quickly fixed.

Whatever version of TOS you have, you've got a remarkably solid piece of software. It's fast and friendly, putting you in the driving seat with the minimum of fuss. Anyone who has spent time on other machines has stories to tell about spectacular crashes. When was the last time your ST crashed while it was at the Desktop? The TT has the flashy v3 and the Falcon comes with a stunning-looking v4, soon to be followed by a fully multi-tasking version. TOS remains one of the easiest and most reliable Operating Systems on any machine.

WHICH ONE HAVE I GOT?

The easiest way to check which version of TOS you have is to use the **CHECKST.PR** which comes as part of *Knife ST* on this month's Cover Disk - see page 31 for details. Just run the program and you are given the low down on your ST's internals including the ROM version number. Alternatively check out **DESKTOP INFO** from the Desk menu on the Desktop. Click on this and up pops a copyright box with a load of dates on, these

tell you which TOS version you have from the list below.

Date: 1985

TOS 1.0 "ROM TOS"

The first version fitted to STs, STFs and STMs and early STFMs

Dates up to 1987

TOS 1.2/1.02 "Blitter TOS"

Relatively minor upgrade, including Blitter support. First fitted to Mega STs, then all STFMs.

Dates up to 1989

TOS 1.4/1.04 "Rainbow TOS"

Major upgrade greatly improving hard drive access and giving you a decent file selector. The Atari symbol on the copyright box has an attractive multicoloured effect. The latest version for STFMs

Dates up to 1989

TOS 1.6/1.06 and 1.62 "STE"

TOS"

STE version of TOS 1.4 with support for the extra hardware. V1.62 fixed a minor bug and is the current STE TOS.

Dates up to 1991

TOS 2.05 and 2.06 "Mega STE TOS"

Major update for the new machines with many of the features of TOS 3. Also available as an upgrade for STFMs and STEs.

HELP!

GAMEBUSTERS



ROB MEAD
This man's major claim to fame is that he once shared a packet of cheesy footballs with someone who met Frank Bough's cousin in his local supermarket.

Cheated this month:

Formula One Grand Prixpage 53
Isharpage 50
Lotus Turbo Challenge 2.....page 53
Lotus Turbo Challenge 3.....page 53
Shorties.....page 49
Voodoo Nightmarepage 55

ST ANSWERS

BILLY ALLAN



Billy once dreamed he was a garden centre. He woke up to find a shed and 14 tons of peat in his ear.

CLIVE PARKER



Clive was a bouncer at a playgroup, but the bad language and violence was too much for him to bear.

MAC MARS DEN



Mac's not his real name, of course. It's really Gerry and he had three No 1 hits in the '60s with the Pacemakers.

TIM TUCKER



Tim's been banned from China after his last visit caused a minor earthquake when fans rushed to greet him.

TONY WAGSTAFF



Ex-president Gorbachov said of Tony "This is a man I can do business with." No wonder there was a coup.

Today's techie tips

Assembly pointersPage 62
Convert GFA Draft to GEM Metafiles.....Page 61
GFA Programmer's surgery.....Page 62
Music and Midi.....Page 62
STOS Corner.....Page 60

WIN! WIN! WIN!

Be a good blokey and send in some corkin' Gamebusters or ST Answers tips an' yew could get the chance to roll about in the hay with Daisy, the prize Friesian cow. If you don't fancy that you can 'ave £25 instead. Can't say fairer than that, can ee?



GAMEBUSTERS

Are you the kind of person who sits at the front of the class and leaves an apple for the teacher? Or are you the sort who sits at the back and cribs off everybody else? Rob Mead finds a bit of bubble-gum under his chair, picks out the grit, and uses it to stick this month's games cheats, hints and tips to the blackboard

SHORTIES

These handy pocket-sized cheats, tips and type-ins all go to prove that size is not important. Unless you keep being elbowed in the face by giants in the supermarket, of course...

Annihilator - PI

Press the Spacebar to pause game. Then press <Shift> and any Function key (F1-F10) to take you to that level.

Fantasy World Dizzy - Codemasters

On the High Score table put your name as IMMORTAL to gain infinite lives.

Final Fight - US Gold

Pause the game and type SHERIFF FATMAN in order to achieve infinite energy.

Parasol Stars

Pause the game and type CYNIX, then press C, T, D, G, X, B, M for a few surprises.

Pitfighter - Domark

Type LOBSTERS and then press keys <I> to <O> for Level C for championship and L for grudge match.

Rolling Ronny - Virgin

Press <Return> and type in SONIC to get speed or type in ROCKET and press <Return> to get the ability to fly. Press F9 for extra money.

Sly Spy - Ocean

Type your code in as 007 and type SHAKEN NOT STIRRED for endless continues.

Terminator 2 - US Gold

Pause the game and press F1-F10, then unpause by pressing <Fire>. Now <Esc> to skip levels.

TURN TO PAGE 60 FOR ST ANSWERS

ISHAR, LEGEND OF THE FORTRESS

DAZE



■ Satanic traffic wardens caused great misery in *Ishar* by towing away untended waggons.

This one is going to run and run. We've had stacks of cheats, tips and lists, but there's still no complete solution. That £25 is still waiting... Anyway, here's just a selection of some of the stuff we've had in:

Bob Carpenter of Walsall has sent in these extremely useful

tips to share food, potion components and arrows between your characters. With a bit of luck this means you never have to buy them again. According to young Bob, you need a two-handed weapon – that is, a cross-bow, heavy axe or mace – and at least two arrows, food or other components.

1. Click on the face icons to display the hands of two characters.

2. Give a two-handed weapon to the character with the item to duplicate – food, for example.

3. Take the time to duplicate the item and click on the shaded hand.

4. Place the item in a second character's hand.

5. Repeat steps three and four until you have the maximum number of items.

6. Warning: You can't share these items between characters in the normal way. To share the items follow steps one to four, but then pass the item onto another character. This is most useful with food.

Maps and tips

Paul Forbes of Tooting, London has also sent in some tips and



■ "Blimey! I wouldn't mind recruiting her." "She doesn't even like you! It's me she wants to make magic with." "What, with that great big hole where your eye used to be?" "What hole?" (Squelch). "I see what you mean."

some handy maps of some of the dungeons and villages to help you find your way around *Ishar*.

The Witch is in Fhulgrod forest in the form of a small pig. Use a Pig Detransformation potion to change her back and she can join your team. The witch is useful because she has an anti-Krogh spell which you can't buy. She also has a powerful lightning spell.

You can build up a large amount of cash – if you're patient – by going to Elwingil village. The monsters regenerate when you enter or exit, so all you have to do is kill plenty of them and visit the tavern which is a short walk from the village entrance – when health levels run low.

You have to rescue Erwan's daughter – the Princess – and take her back to his house in Halindor. He gives you a key which opens the gate to Valathar dungeon. The Princess is held in one of Elwingil's squares. Unfortunately, you must have a team of women to rescue

the Princess – otherwise the men in your team fall in love with her and you can't get rid of her.

Stuart Wimbush of Strathclyde has sent in a hint for attacking baddies and a list of rumours and hints found in Kendoria.

Recruit the Unknown Occult Monk from the tavern in Lotharia since he has a Lightning spell. This is useful for attacking all enemies simultaneously and doesn't have to be aimed. If you write runes with it, then, when you encounter an enemy, switch to the Inventory screen of one of your characters. While on this screen you can't be attacked, but you can use the scroll icon to cast the spell at the enemy, so killing them while avoiding getting killed yourself.

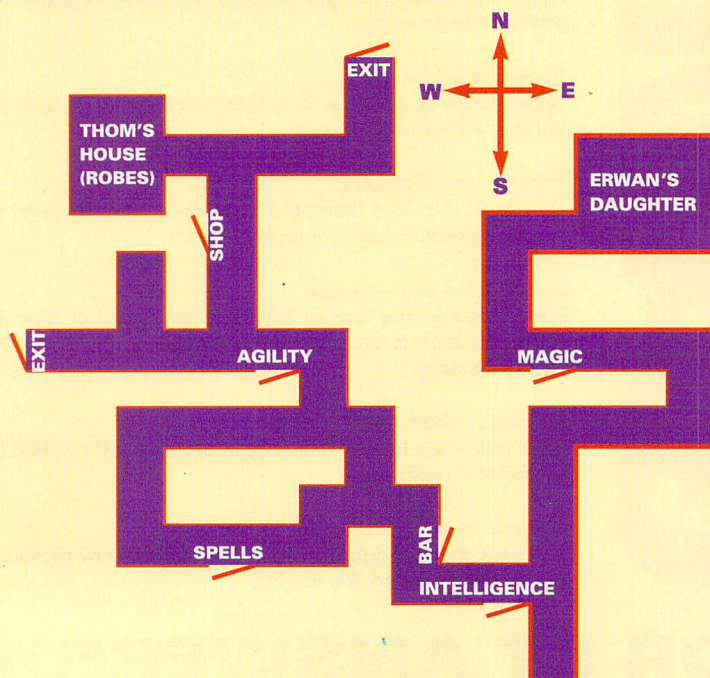
Rumours and information

Tavern in Angarahn

Life is now impossible with Krogh around...

ELWINGIL VILLAGE

Here's a map of the village, showing all the principal locations. Be sure to heed Paul Forbes' advice about Erwan's daughter – you need the key to Valathar's dungeon



■ "Right then, lads, what can I do your for? Spot of weight-training? Bench presses?" "Sod this, I'm off to buy a bottle of Lucozade."

We had better times with Lord Jarel... You know his mates are still alive and one of them lives here, in the village...

Tavern in Lotharia

A new medium lives in Osgirod. I went there yesterday. He is very good... cheap rates, no long, quite competent. He told me I was inversed, chaotic and orophobic.

West tavern in Fragonir

I will tell you a secret... It is said that Krogh may be Morgoth's son! The friend who told me this knew it from Irvan's daughter... ahh... Irvan's daughter... (sigh).

East tavern in Fragonir

You remember Fragom, my cousin from Lotharia?... Well, anyway, he recently attended a magical seminar and now he is searching for the magic flask believed to be in Rhudgast forest...

Tavern A in Urshurak

I moved the old chap Olbar yesterday... We took him back to the square... The poor man is not getting any better with age... His fights with Morthgoth have left him backward.

Tavern B in Urshurak

History question: where was Morgula confined after she tried to oppose Krogh? In the Forbidden House? You lost! In Fhulgrod forest... My turn!

Tavern C in Urshurak

I heard a good one this morning. Krogh the son of Morgoth and... guess who?... Morgula the Witch! Speak low, you idiot! Someone could hear us.

Tavern D in Urshurak

Grand Master Jon, Jarel's alchemist, has left the business. He sold his magic shoppe down in Rivoli Street and moved to the city of Kandomir.



■ "Have you got any pickled witches' feet in stock?" "No, but I've got a few packets of wizards' nasal hair left over from All Hallows." "We'll take them."

Tavern E in Urshurak

My friend Leslie has disappeared! Last time I saw him, he was in Zendoria's area. I hope he did not try to enter the Forbidden House...

Tavern in Halindor

Thorm, Jarel's faithful warrior, is under house arrest in one of

Elwingil's squares. How cruel. He is a harmless, senile old man!

Tavern A in Elwingil

I will begin my mission tomorrow. I've heard that a man named Zach, supposedly one of Jarel's companions, managed to get to Valathar. He will get what's coming to him!

Tavern B in Elwingil

Mythology question: According to legend, where is the Magician's Talisman hidden? Well... mmhhh... You lost! It lies in Valathar's dungeon.

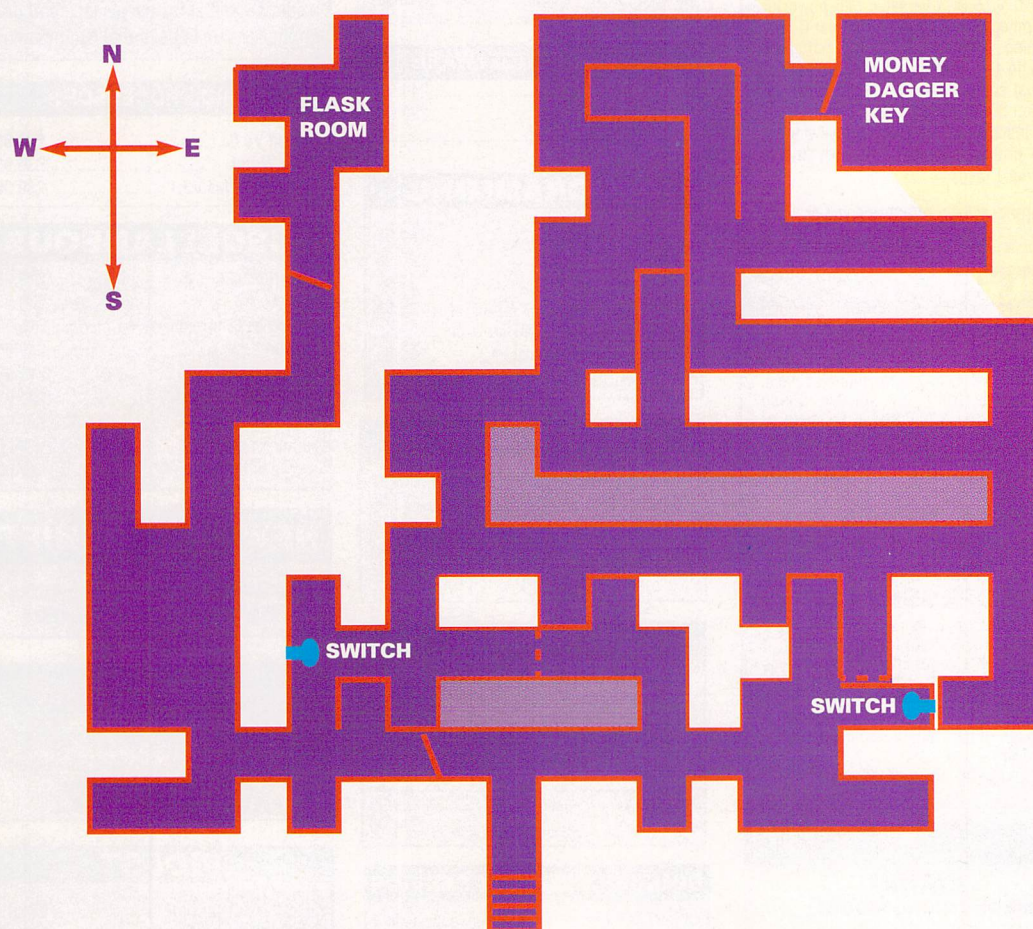
So, listen to all those rumpurs and pay heed – good luck! To round off here are some more tips from the somewhat cryptically entitled Iceberg of Llandidloes, Wales.

1. If one of your party refuses to use first aid on all other members, he is likely to desert you when you're asleep. Because of this, make sure you take away their possessions before you bed down for the night.
 2. Don't waste money on getting members of your party psychoanalysed – you can get an idea of who likes who when they try to heal each other.
 3. You can find Ygwen north of Silmatil by the water's edge.
 4. If you try to pull out the sword from Baldaron's rock and it says: "You are a little wet behind the ears," it means you lack experience and must go and kill a few more opponents.
 5. Rune tablets can be found in Lotharia, Gil-Aras, Rhudgast dungeon, Zendoria (or the Forbidden House) and Level Two of Valathar's dungeon.
 6. To find Brozl, use a Detect Invisibility spell on him.
 7. You can get across to Valathar by using the transporter in Halindor.
- And that's it – have fun!

RHUDGAST DUNGEON

In the western part of the dungeon is a large room with two entrances to the north. The western access leads you to a runic tablet, while the eastern access enables you to find a

magic flask which is the key to the whole game. Be careful which route you take, because a giant is waiting at the crossroads who can cause you a considerable amount of damage





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GROOVING IN THE... BUS LANE

You've just popped into the pit-stop for a quick tyre change and a bag of barbecue briquettes, but wait... no pit crew! There's only one thing you can do to save the Championship. Here's how:

Lotus Turbo Challenge 2 GREMLIN

Martin Cubitt of Rayleigh, Essex obviously knows a thing or two about supercharged intercoolers and overhead manifold gaskets, because he's sent in all the passwords for the various stages of this game. Either that or he's scanned his floppy disk for odd-looking file names:

Forest	no password required
Night	Twilight
Fog	Pea Soup
Snow	The Skids
Desert	Peaches
City	Liverpool
Marsh	Bagley
Storm	E Bow

and Andy Parkes of Walsall has discovered that if you type in TURPENTINE you get infinite lives, DEESIDE gets you extra time and DUX makes the track scroll faster.

Lotus Turbo Challenge 3 GREMLIN



■ Ancient Chinese proverb say: "Lotus position teaches us the humility of inglorious defeat."

OK, we know we said we didn't want any more level codes last month – and we still don't – but this bevy of lovelies from David Thomas of Hythe, Southampton was just too good to

resist: If you want to practise one of the tracks type in a code at the bottom of the main menu under Code Heading. Make sure the Game option is correctly set to either Arcade or Championship and the Course option is set to: "Select your own track." Now select "Start Game."

If you want to practise several courses of the same game mode – Arcade, for example – then you can define a number of codes when you select the Define option. Make sure the Course option is set to "Player designed circuits" and that the Game mode is set correctly.

Championship mode

LEVEL ONE – EASY

- Track 1: CRRIPWBXX-28
- Track 2: QPWWMVQKQ-34
- Track 3: XGPGZHH-42
- Track 4: FGWLSYCKM-51
- Track 5: PRRUMPUMV-68
- Track 6: NANCXXXZ-39
- Track 7: IPWONWOB-65

LEVEL TWO – MEDIUM

- Track 1: RLQYDVAKA-48
- Track 2: HDMOQFAKA-51
- Track 3: WXQBQMDXD-88
- Track 4: UDONAJHAL-47
- Track 5: NKWCXXXK-33
- Track 6: AONGLQKTC-63
- Track 7: ZXJGHBKH-70
- Track 8: DPGTQKBHQ-42
- Track 9: IPMIJOBHQ-62
- Track 10: MUYURWFHA-46

LEVEL THREE – DIFFICULT

- Track 1: PPRGGQFVL-52
- Track 2: JPIQUHCE-65
- Track 3: EIIBGGAFE-48
- Track 4: CIGIUQCLT-92
- Track 5: KNHUPHHKE-64
- Track 6: VVOSHGSIG-86
- Track 7: RGHVVBRET-89
- Track 8: YDOERACTJ-86
- Track 9: GXQFSUMPP-45
- Track 10: TVQLSYUFU-89
- Track 11: WMQHYMTVJ-85
- Track 12: OKUOBJIAC-86
- Track 13: FIMJIBCK-68
- Track 14: SIGTXXXH-35
- Track 15: WNQKMPHVN-80

Arcade mode

LEVEL ONE – EASY

- Track 1: PWRWVWHNM-30
- Track 2: XMQIYSKAS-80
- Track 3: UVQSNPBCM-70
- Track 4: CWVBPQCAV-50
- Track 5: SFXUXXXP-60
- Track 6: HSYWYSJCG-50
- Track 7: IVVEMMKOZ-50

LEVEL TWO – MEDIUM

- Track 1: ANNSNQLPN-60
- Track 2: KZVDOPHCY-50
- Track 3: RTLMIJKHB-60
- Track 4: ERRURV-67
- Track 5: NSSSXXXS-60
- Track 6: WSVUQPCSJ-70
- Track 7: OUNDEFACG-99
- Track 8: GXWDYPACV-68
- Track 9: BZ ZF B AT-90
- Track 10: LWNJWKACN-90

LEVEL THREE – DIFFICULT

- Track 1: IYVVNEVQR-35
- Track 2: KAZZNIKAI-45
- Track 3: FGGLJDAF-65
- Track 4: MFFSRPYDU-60
- Track 5: PLQTZQDPE-80
- Track 6: ZKZGKJKKK-50
- Track 7: TGGJGGTTT-63
- Track 8: AFZYBQCT-70
- Track 9: JBOUKJHKA-99
- Track 10: DASICOTET-80
- Track 11: XDNUSEECE-85
- Track 12: QDSJVEBT-75
- Track 13: SKGYXXXXX-57
- Track 14: YKGJWVNAK-92
- Track 15: WJMEGMEQH-60

Formula One Grand Prix MICROPROSE



■ Don't you just hate driving round country lanes? You always get stuck behind some biddy with the road sense of a squashed hedgehog.

Mr E Parkinson of St Athan, South Glamorgan has obviously got one eye fixed firmly on Nigel Mansell's vacant seat and has sent in a few tips to show you what a driving demon he is. However, you need to be pretty good already to make use of these tips and you still need to experiment a bit to get the right set-up.

1. Don't just do one fast lap on a set of qualifying tyres, do two or three. With four sets of qualifying tyres at your disposal, this means you have the chance to do at least 12 laps and give yourself a higher position on the starting grid.

2. If you're not racing above 40-50% of the total race distance – 20 or 30



■ As you can see from the picture, the Sinclair C5 is alive and well. The main difference is a better paint job and the use of long life HP7 torch batteries. This is the cabriolet model with optional head protection.

laps is hard work – you can always use the very soft Compound D tyres, which are very grippy and give you a better lap time.

Finally, here are some general set-ups for fast, medium and street race circuits. These set-ups do work and can take you Pro level.

Fast tracks – like Hockenheim and Monza.

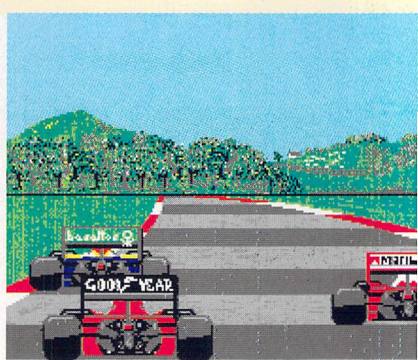
Front wing: 25.
Rear wing: 20.
Brake balance: +5.
Tyres: "D," very soft.

Medium tracks – like Silverstone, Estorck and Interlagos.

Front wing: 40.
Rear wing: 40.
Brake balance: +5.
Tyres: "D," very soft.

Street races – like Phoenix, Monaco and Adelaide.

Front wing: 60.
Rear wing: 55.
Brake balance: +5.
Tyres: "D," very soft.



■ Mr Tobacco Sponsorship likes taking risks with other people's lives – overtaking on corners at 235 mph, lighting up in front of his kids. Makes you sick, doesn't it?

SELECT A TRACK



■ "I say, let's get some funky sounds on ICE. How about a spot of Mantovani? Dire Straits anyone? Genesis then? Jive Bunny? You've got no taste, you lot."

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VOODOO NIGHTMARE - GBH

It took **Steve Rennie** of **Balham, London** about a year on and off to complete this game and now the helpful chappie has sent in the complete solution, so you can do it in about... five minutes, probably. Here's the first instalment because there's so much Part Two is going to be in next month's issue.

All directions given in this solution are based on north being straight up.

Hint 1: If you've played other 3D games like *Cadaver*, you may find turning the joystick 90 degrees anti-clockwise gives better character control.

Hint 2: Save often.

Quickly enter the first temple.

Spider Temple

Exit west exit west.

Use fourth teleport from north door, collect gem and use teleport to next gem. Kill or avoid spider, collect the gems. Retrace your steps back to the main corridor and exit north.

Kill spider, exit north. Exit north. Collect blue gem and exit south. Exit east. Collect gems and teleport into main room. Go north-

east across teleports and push the rock north-east.

Use the exposed teleport to collect gems from east corner. Teleport back and use the second-from-bottom teleport on right to collect the gems from the north corner. Teleport back and use the next south-west teleport to collect the gems from the south corner. Exit south.

Kill spider, collect gem and exit north. Teleport back to main room and use third from bottom left teleport to get to west corner, exit west. Exit south, exit east, exit east, exit north.

Kill spider, walk up middle of room to three blocks, go east and north to edge of gem area. Go north and exit north.

Kill spider, exit west, exit west. Collect all gems, exit east, exit east, exit east. Kill spider, exit east. Collect all gems and exit west, exit south. Kill or avoid spider, exit west. Collect gems, push block, exit east. Go south-east along Rolo-shaped blocks and use teleport to collect gems. Teleport back.

Go north-west and turn north-east between Rolo blocks. Turn sharp south-east between the top two right blocks, then north-east to collect gems and exit east. Exit south. Kill spider and exit west,

exit west. Kill spider and exit north. Kill spider, eat food, exit south, exit south, exit west. Kill spider.

Exit east, exit north, exit east, exit east, exit north, exit west, exit north, exit west, exit south, exit south, exit west, exit west, exit south, exit south. You should now be back in the big room with the teleports all down the corridor. Exit east, exit north.

Kill spider and exit east. Kill spider and exit east.

Collect gems, use teleport. Kill or avoid spider. Use the bottom west teleporter in order to get to east corner. Collect gems, exit east, exit south.

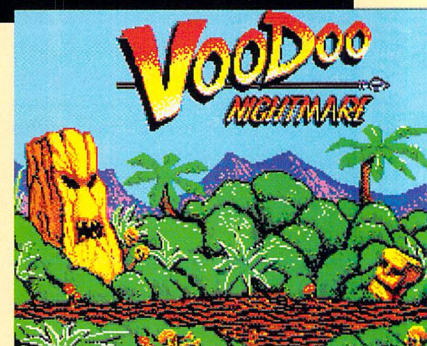
Kill spider and collect blue gem. Exit north, exit west. Teleport back to main room and use top east teleport. Exit west, exit west, exit south, exit east, exit east.

Kill spider and exit north. Collect gems and use teleport. Collect gems. Use teleport and exit south. Exit east.

Collect gems and exit west. Exit west, exit west, exit north, exit north, exit north, exit east.

Collect gem and then you can exit north. Push block to south-west and exit north.

The spider god gives you a pin, the power to break many webs and tops your heart up to five.



■ A *Voodoo Nightmare* is a cocktail made from spider venom and petrol.

Jungle

Go south-west to the edge of the island. Turn south-east and go through the hollow tree trunk. Follow the path north-east, cross the bridge - keep to edge - and enter the store south of the bridge by the gap in the east bushes.

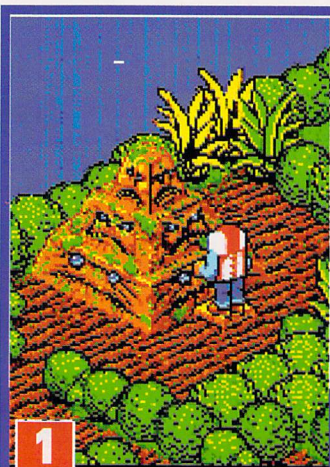
Store

Buy machete and ZZZ potion.

Jungle

Change from boots to machete - better for killing creepy-crawlies and hacking through the various bits of the jungle. Make your way in a north-easterly direction to the next bridge. Cross over the bridge and go sharp north-west. Follow the path to the clump of palm trees and use the machete to hack your

SPIDER, SPIDER BURNING BRIGHT...



1 Here you are outside the Spider Temple. Don't hang around too long or all sorts of nasties start to attack you.



2 Up the corridor. The black circles on the floor are the teleports you can use to get around different rooms on.



3 Push the clump of rock at the end to reveal an extra teleport. You can now get to the jewels in the north-east corner.



4 Luckily there are no bad-dies in this room, just heaps of jewels for you to collect for the spider god.

EVEN MORE VOODOO NIGHTMARE

way into the banana grove. Collect 65 bananas by walking over them. Exit the banana grove and follow the path south-east all the way to the store, hacking your way through some of the bushes.

Store

Buy some TNT and the hour glass.

Jungle

Go back along the path and cross the bridge. Go south-west and cross the other bridge. Turn north-east and work your way up the island, keeping to the eastern side of the island. When you reach the cluster of huts in the clearing, enter the store.

Store

Buy the witch doctor doll and the medicine bottle.

Jungle

Continue up to the top of the island, turn north-west and work your way westwards towards the Snake Temple, which is located in the hollow tree trunk at the top left corner of the jungle.

Snake Temple

Push the growth, which looks like a molar, north-west to exit circle. Kill the snake, collect the gems and exit north by jumping over the

holes. For most holes or gaps just walk up to the edge and face the direction you wish to jump and press <Fire> – make sure you are wearing boots!

Collect gem and exit east. Kill snake and exit north.

Push north-west rocks to nearest wall to get trapped gems. Collect the loose gem, then head north-west and push the growth north-west. Turn south-west and push the other growth to the south-west wall. Go back and use the second teleport on the left. Step onto the next teleport and use. Face north-east and carefully push the growth – don't fall down the exposed hole. Teleport back to the first teleport, walk and jump over the hole. Collect the gems, jump back and exit east.

Exit south. Kill snake. Don't touch the gems yet and exit east. Kill the snake, collect the gem and then you can exit east.

Use teleport, push any rock – all gems turn red – collect gems and teleport back. Push the solitary block to the south-east and exit west. Exit west.

Jump to the rock on the small island and push it to the south-east to turn all the gems blue. Jump back and collect the gems. Exit south. Kill snake and exit east. Kill snake, push rock and exit east.

Kill snakes, collect gems – best way around is via north exit – jump the gap and exit east. Exit south – don't bother with this room yet.

Jump the gap, collect gems. Kill or avoid black snake – try going south-west after the gap, then south, do a sharp north-east turn, then go south-east. Exit south.

Kill snake and exit south. Collect gem and exit south. Exit east. Kill snake, collect gem and exit north. Kill snake, collect gems – kill or avoid black snakes – and exit north. Kill snake and exit north. Collect gems and exit west. Exit north. Kill snake, collect gems and exit east.

Kill snake. Jump carefully to collect gems and exit west. Exit south, exit south. Push block and exit south, exit west, exit north.

Work your way through, jump gap and exit north. Collect gems. Kill or avoid snakes. Exit north. Kill snake and exit west. Push growth in middle of room to north-east. Kill snake and exit north. Kill snake and exit east.

Push growth near door south-east across edge of gap. Return and push the other growth to the north-east wall. Use the teleport by the north exit, then use the next teleport. Quickly go north-west and down the corridor to the north-

west of the two black snakes. Collect the gem. Walk back and push the growth between the two boxes – with one a little further north. Go round to the south-east wall and push the other growth to the two boxes – this traps one of the snakes. You have to kill the other. Use the teleports to return and go to the west exit. Walk south-east, jump the gap, collect the gems and jump back. Retrace your steps to the south-east wall. Follow the wall down, jump across the gap, collect the gems, jump back and exit east.

Kill snakes and exit east. Push block and exit south. Collect gem and exit north. Exit east, collect gem and exit south. Kill snake and exit west. Exit west. Push growth in middle of the room and exit north. Jump gap and exit west.

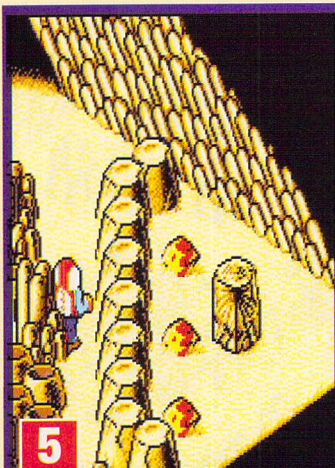
Use the west teleport by the south exit. Collect gem and then you should kill the snake. Teleport back and exit north.

The snake god takes ten blue gems and rather kindly gives you a pin, snake bite immunity and tops your heart up to eight.

As you exit the tree trunk, wait for the sun to come up and you are transported to the Eagle Temple in the sky. Phew!

Next month we bring you the Eagle Temple... if you can wait!

WATCH OUT OR I'LL PULL YOUR LEGS OFF



5 You can't get to the jewels on the right until later on. You also need to push the block to make good your escape.



6 To collect the blue and red gems you must use the teleport in the bottom-right corner of this room.



7 At last, some well needed food. Kill the spider and get a move on. You've nearly completed this temple.



8 The spider god gives you a pin and extra heart points for your efforts. Now it's time to go out into the jungle...

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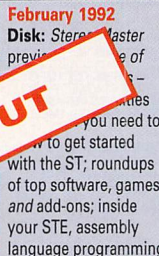
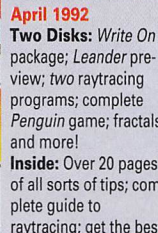
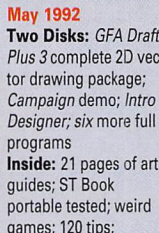
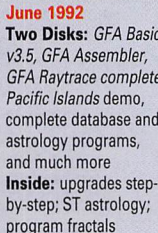
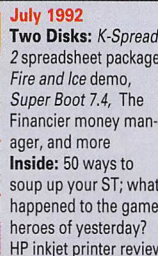
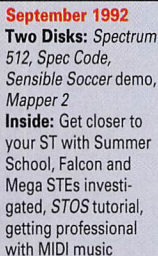
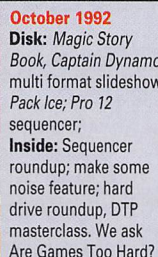
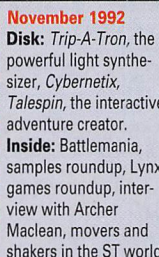
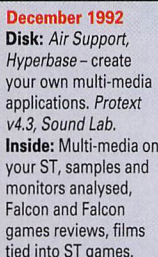
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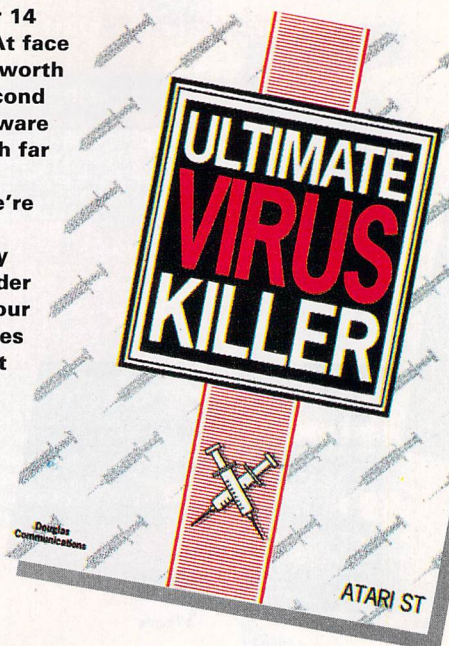
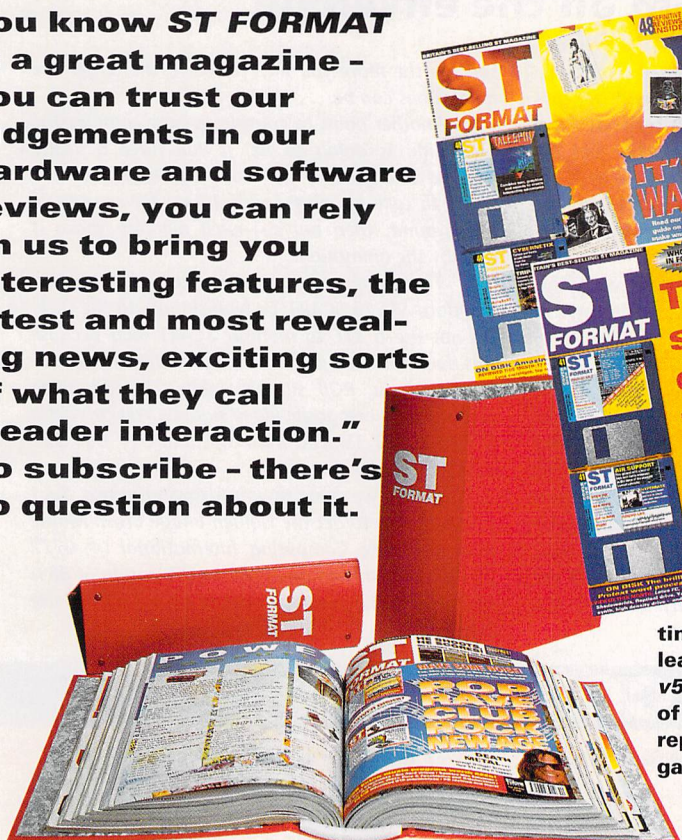
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THE ICONS



BEGINNERS

Don't know one end of your ST from the other? Then you must be new to the ST – look for this pic.



COMMS

Are you fascinated by the world of modems and communications? Check it all out here.



DISKS

Your need your floppy and hard disks work properly. Having probs? Here we sort them all out.



GAMES

Sol! You want to cheat, huh? Well, look at Gamebusters since we don't cover games here this month.



GRAPHICS

So much potential can be achieved in the world of ST art and graphics. If only you know how...



HARD DRIVES

If you have one, you want to use it, right? To get the most out of yours, check out this icon here.



PRINTERS

Does your paper all get in a tangle when faced with your ST? It needs counselling – we can help, relax...



PROGRAMMING

All sorts of programming this month, listings and everything. Brilliant. If you like that sort of thing.



SOUND

Many people can't live without music, so make sure you keep your gear in order. This is where.



ST PROBLEMS

Miscellaneous bits and pieces live in here – so if your problems are vague and woolly, come here.

Budding Walt Disney...



I am interested in making short cartoons around 20 to 30 seconds long using my STE. The characters are 2D Mickey Mouse style animations. Is this possible on the STE and how can I transfer them to video tape? Do you think it would be easier to use a Falcon?

I find it very awkward drawing with the mouse, is there a better pointing device for the ST that feels like a pencil?

Colin Brunger, Kent

stf: Yes, you can produce excellent animations on the STE. The program you are looking for is called Deluxe Paint from Electronic Arts (☎ 0753 549442), this program enables 999 frames of animation to be created. We created a 300 frame animation that used about 800K of disk space – this should be ample for your needs. The length of the animation is limited only by memory size and disk

space – the more you have of each, the larger the animations can be.

Another point to consider is how complex the animation is going to be, if you have a vastly detailed background then each individual frame is going to take up more space. If you have a simple background, then not so much memory space is used by the animation.

To record your animation to video tape, a standard STE to SCART TV lead should do the trick. Do not use a STE to monitor SCART lead because this does not work with a video recorder since monitor leads use RGB signals, while TV and video recorders use composite video signals. You can get a STE to SCART TV lead from Meedmore (☎ 051 521 2202) for £8.80.

Finally we come to your drawing device. Your best option is to get the Golden Image Brush Mouse from Ladbroke Computing International (☎ 0772 203166) which was awarded an STF rating of 88% in issue 37. This is a replacement mouse shaped like



STOS CORNER

Billy Allan tries to sort out your STOS programming queries

It's the size that counts

I have written a backup program which backs up new or updated files on my hard drive. The problem is that when I BSAVE the file, its length is rounded to the nearest 256 bytes.

Wayne Carrol, New Zealand

stf: We suspect that you are saving out the file like this:

```
10 bsave "file.dat",start(x)
to start(x)+length(x)
```

The problem is caused by STOS always reserving memory banks in multiples of 256 bytes, so you need to do something like this to get the actual length:

```
10 open in #1,"file.dat" :
L=lof(#1) : close #1
20 bsave "file.dat",start(x) to start(x)+1
```

which ought to solve the problem.

Random problems

In 1st Basic there is a command called RANDOMIZE TIMER which mixes up the ST's clock so that the random number routine works properly. Which command does the same in STOS?

Mikko Ranta, Finland

stf: STOS doesn't need to initialise the random number routine before you call RND(X) to get a random num-

ber. You can, however, greatly improve the randomness of the result by randomising the TIMER variable as well:

```
10 for T=1 to 100
20 timer=rnd(50000) : print rnd(100)
30 next T
```

Nice front end

I would like to have point-and-click interfaces in my programs, but how do I check for the mouse clicking on a box on the screen? Also, when I try and link scrolling frames, as in video titling programs, I get a stop in between. Please help.

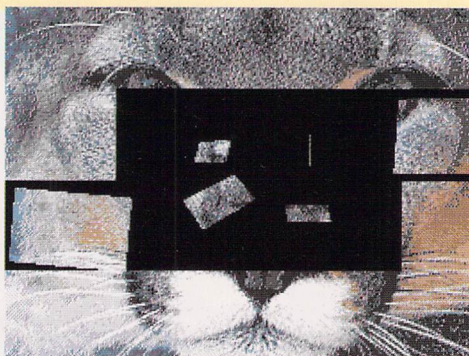
Bill Jones, Holyhead

stf: To check for collisions with the mouse and a box use the SET ZONE and ZONE(X) commands. This should demonstrate the basic principle:

```
10 set zone 1,0,0 to 32,32
20 repeat : Z=zone(0) : m=mouse key :
until Z=1 and M=1
```

Since you have an STE, you can use the enhanced hardware to solve your scrolling problem. Assuming you have three pictures you want to scroll through, this ought to work OK:

```
10 reserve as work 10,4*32000
20 load "pic1.neo" :
screen copy logic to start(10)
30 load "pic2.neo" :
screen copy logic to start(10)+32000
40 load "pic3.neo" :
```

■ Another animation created by *Deluxe Paint*. We took a picture of a lion and broke it down into 16 segments, these segments then tumble towards the front screen from a vanishing point at the back of screen and assemble themselves into a complete picture.

a rather thick pencil – it sounds like being just what you want, and a new higher dpi version is now available. The Brush Mouse costs just £19.99, or if you lash out an extra fiver you can get Deluxe Paint with it for £24.99.

Bubble trouble



Please could you tell me if I can use the Star SJ-48 Bubblejet printer with my 1MByte 520 STE? If I can, where can I obtain printer drivers for the programs I use? I need printer drivers for *Time-works 2*, *Write On* and *First Word Plus*.

David Woodley, Devon

stf: Good news for you, David, the Star SJ-48 printer can use some of the printer drivers that are supplied with the programs you mention. If you look at your printer manual, you can see that it explains that the printer works under Epson LQ and IBM Pro-printer emulation. What this means to you is that you simply select the Epson LQ drivers when you're installing *Write On*, and select Epson LQ drivers from the other programs. The Star LJ-48 can use both 180 dpi and 360 dpi Epson LQ drivers, so you can achieve excellent results with all of your software. Practically all serious software has Epson LQ printer drivers included as standard so you can use your printer with any program.

.IMG package required



Is there a graphics package that can be used from a hard drive and in all three resolutions? I also need to be able to save files in .IMG format so that I can import the files into my DTP software, I have tried using *Canvas* from your Cover Disk but this program seems to balk at loading and saving files to my hard drive. There also seems to be a problem with .IMG format in *Canvas* – it doesn't work!

David G Hibbert, Cheshire

stf: *Canvas* has never worked properly with .IMG files although we have never had any problems with running it from a hard drive. The only program that springs to mind that works in the way you require is *Hyperpaint* by Atari. Both *Hyperpaint* and *Hyperpaint 2* support Degas and .IMG files in all three resolutions, and *Hyperpaint 2* supports Neo-

chrome files in all three resolutions. You can get *Hyperpaint 2* from Softmachine for £29.95, call ☎ 091 510 2666.

PAL confusion



I have a PAL TV and I wish to change it to SCART, is there a device that enables me to do this or do I need a SCART TV?

J D Gordon, Edinburgh

stf: We assume you mean you want to change from using an RF (aerial lead) connection to a composite video (SCART) connection. Unfortunately it is impossible to use SCART connections, the hardware is not available. SCART in TVs was originally designed to make a direct video connection between a VCR and TV to provide higher quality audio and visual reproduction than can be achieved by the normal RF connection. To improve your picture quality you have to get a new TV with SCART capability or a dedicated monitor.

GFA Draft to GEM-Metafile Conversion



Mr N C Coles of Weymouth wrote in and said that we didn't explain how to convert GFA Draft files to GEM Metafiles using the META.PRG in our introduction to the program in *STF 34* – we were a tad



Programming tips Finally, here are some more little tints and hips to aid your programming

There is an undocumented command in the Compiler extension called *COMPAD* which, we assume, returns the address of the compiler extension. It can be used to check whether a program is being run within *STOS* or not like this.

```
10 if compad>0 then print „
    „Inside STOS“ else print „Outside STOS“
```

If you are really short of processor time, then you can try using memory banks rather than arrays:

```
10 reserve as work 10,16 : S10=start(10)
20 D1=deek(S10) : D2=deek(S10+2) : „
    D3=deek(S10+4) : D4=deek(S10+6)
```

is faster than

```
10 dim D(3)
20 D1=D(0) : D2=D(1) : D3=D(2) : D4=D(3)
```

Also, remember that *FOR* loops are much slower than writing the commands out in full.

```
10 for T=1 to 10 : X=X+10 : next T
```

is much slower than

```
10 X=X+10 : X=X+10 : X=X+10 : „
    X=X+10 : X=X+10 : X=X+10 : „
    X=X+10 : X=X+10 : X=X+10 : X=X+10
```

```
screen copy logic to start(10)+64000
50 get palette(logic) : wait vbl
60 for Y=0 to 599
70 loke $45E,start(10)+Y*160 : wait vbl
80 next Y
90 loke $45E,0 : wait vbl
```

This program works by taking advantage of the fact that you can set the STE's screen address so as to move it up or down through memory by one line, which is 160 bytes. The system variable at \$45E holds the address of the screen at the next VBL and can be used rather than *PHYSIC* to set the screen address. One final point, it is very important that you clear the address when your program finishes.

Sprites again

How do I turn off just one sprite on the screen without affecting the others?

Luke Channon, Natland

stf: The best solution is, of course, not to use *STOS* sprites at all. If you insist however then try the *SPRITE OFF (X)* command which will turn off sprite *X* without disturbing the rest.

Token problem

1. I have had problems using example programs supplied with the *STOS* extensions on the Cover Disk. The problem stems from having to change the extender to one I don't already use which then causes problems with the tokens in the BASIC listing. I have written a program to alter the tokens, – is it likely to cause problems with memory banks?

2. I cannot get the *STOS* assembler program to disassemble programs with the "Z" directive.

Can you help?

Alan Bartholomew, New Zealand

stf: 1. The easiest solution is to temporarily remove the extension which you don't want to use for the moment, then load in the BASIC file and save it back out as an .ASC file and the memory banks as an .MBS file. Then rename the offending extension and re-install the other one. Now load in the .ASC and .MBS files and the should be correctly tokenised.

It is rather unwise to rename extensions, however, because it means that every program you receive which uses it has to be put through the above process.

2. As far as we are aware, the assembler doesn't work very well at all. If you can, try to get hold of something like *EASYRIDER* or *BUGABOO* which has the effect of making life much easier.

Absolute beginner

Please can you tell me how I'm supposed to get a small part of the *Neochrome* picture onto the screen just like Chris Lloyd did in his *Big Eye* demo? I want to try it for myself but can't work it out.

Grant Donald, Kendal

stf: First of all, we would suggest that you re-read your *STOS* manual with particular attention to the *SCREEN-COPY* command. Here is an example:

```
10 load "pic.neo",back
20 get palette(back) : wait vbl
60 screen copy back,0,0,160,100,„
    to physic,80,50
```




GFA PROGRAMMER'S SURGERY

Mac Marsden sorts out your GFA programming problems

Strings 'n' things

I am writing a small menu-driven database program and was wondering how to write ten individual records to a sequential file with the fields NAME\$ and ADDRESS\$. Once they are written, how do I find and delete a file?

J Mancad, Bangor

stf: First you need to arrange some memory for the files to be held in, this is done by the DIM statement, so your first line would be:

```
DIM NAM$(10),ADDRESS$(10)
```

Next you need a loop of some description to enter your ten data files into memory. Use the following listing:

```
FOR F=1 TO 10
  PRINT "INPUT NAME NUMBER.
    ";F;" ";
```

```
INPUT NAM$(F)
PRINT "INPUT ADDRESS ";
INPUT ADDRESS$(F)
```

```
NEXT F
PRINT
```

To find a specific file you must input a search file to be compared with your original data:

```
INPUT "NAME to be
found ";SEARCH$
```

Now you need to compare each name with our Search\$ to see if, in fact, your name exists:

```
LOOP=1
X=0
DO
  X=INSTR(NAM$(F),SEARCH$)
  EXIT IF X>0
  INC LOOP
UNTIL LOOP>10
IF LOOP >10
  END
ENDIF
```

The instruction

```
X=INSTR(NAM$(F),SEARCH$)
```

searches NAM\$ for SEARCH\$, and if found, X holds the value of the position in the string where SEARCH\$ is, hence it is greater than zero and exits the DO loop. If a match is made, then the variable LOOP holds the number of the file you have found and wish to delete. To delete this file all you have to do is to make it equal a null string:

```
NAM$(F)=""
ADDRESS$(F)=""
```

The IF statement stops the program if no match is made. NB - NAM\$ is used instead of NAME\$ because NAME is a command used for another function.

Swann dive

1. How can you tell when the <Caps Lock> is pressed?
2. How do you load an alternative screen font? I have tried VQT_NAME and VST_LOAD_NAME but so far have got nowhere.

3. How do you make a printer driver? Is it written in ASCII? Is there a hard and fast format?

Ken and Kev Swann, Moray

stf: Well...

1. ~BIOS(11,BCHG(BIOS(11,-1),4)). sets <Caps Lock> key on or off depending on its current status. If you make a variable equal the statement, say:

```
x=BIOS(11,BCHG(11,-1),4))
```

Each time the <Caps Lock> is pressed, x changes its value.

2. You are on the right track with VQT_NAME and VST_LOAD_NAME, but you must have GDOS installed via an AUTO folder. Once you have installed GDOS the following procedure should get you on the right track.

```
RESERVE 25600
NUMBER_FONTS=VST_LOAD_FONTS(0)
NAME%=VQT_NAME(NUMBER_FONTS,
  FONT$)
FOR F=1 TO NUMBER_FONTS
  DEFTEXT,,,NAME%
```

short on space - it's quite hard to condense a 250 page manual into four STF pages! Mr Coles has spent many hours fiddling around with GDOS and the other files needed and has come up with the following procedure. Remember that META.PRG needs GDOS installed to run.

1. Load GFA Draft and load the file to be converted. 2. Set the magnification so the whole image can be viewed on-screen and drag a window around the image. 3. While the image is in the window, flip around the x-axis so it is upside

down. 4. Change the view back to standard A4 and drag the image so that the left edge is at 5mm on the x-axis and the bottom edge is at 5mm on the y-axis. 5. Resize the image so it fits into the A4 view, and ensure that the shape remains the same. 6. Move the cross-hair to the far right of the image and note the x-position coordinate. Add 5mm. Move to the top of the image and note the y-position coordinate and add 5mm. 7. Save the image to disk and then copy it to your META.PRG disk, making sure the

image is put into the Drawings folder. 8. Reboot and load META.PRG. When it's running select the Levels button. 9. Click on Level One, select your image for conversion, then click on OK. 10. Select Options and set the paper size to the x and y values you calculated in step 6, to centre the image in the frame. 11. Go back to the main screen and select Start. The image is converted and given the extension .GEM instead of the previous extension. 12. Quit META.PRG and copy your converted file to your DTP data disk.



ASSEMBLY POINTERS

Tony Wagstaff sorts through your machine code queries and emerges with these answers

No Exit

I have a problem exiting the 32-colour program in STF 38; I've tried Pterm but it doesn't work.

Emmanuel Renquin, Belgium

stf: The listing is designed as a sub-routine, not a complete program; as a result of a typing error there should be a rts just before vbl_routine. Place a label at the start of the listing, and jump to it with bsr label. Your main program should be able to exit OK, having removed the vbl_routine and switched off the horizontal blank. You should also restore the original palette. A word of warning; it's better not to change all 16 colours on any one blank, since some of the line will have been drawn before all the colours are changed, making the borders between palette changes fuzzy.

Fault-free Falcon

How can I be sure the Falcon has no faults with the operating system, or its internals when I come to buy it; and how do I work out the speed of the 68K instructions?

Brian Boothe, West Midlands

stf: There can be no guarantee that the Falcon will be 100% trouble-free. Most versions of TOS have had minor bugs, although Atari have produced patches to fix them. What you can be sure of is that any problems will be reported in ST FORMAT.

There are two methods for timing the instructions. Firstly, look 'em up, for instance in The 68000: Principles and Programming by Leo J Scanlon (ISBN 0-672-21853-4). Secondly, run this listing:

```
ct equ 59999
move.l #0,-(sp)
move.w #$20,-(sp)
trap #1
addq.l #6,sp
move.l $4ba,d2
move.l #ct,d5
loop_1
```

```
dbra d5,loop_1
move.l $4ba,d3
sub.l d2,d3

move.l $4ba,d1
move.l #ct,d5
loop_2
your instruction goes here
dbra d5,loop_2
move.l $4ba,d2
sub.l d1,d2
sub.l d3,d2
```

On an ST, the value in d2 divided by 60000 is the timing in 200ths of a second. This is not too accurate as the timings do vary with temperature and other conditions, but it will give you a rough idea as to whether one instruction is faster than another.

Virus check

I have written a program to check if viruses are in memory, but it ignores them whether any are present or not.

James Loftus

stf: James' program works as a boot-sector program, checking whether the

magic number \$31415926 is present at address \$426. This indicates that a memory resident program is present, which may or may not be a virus. You should have more luck if you run this as an AUTO program or from the Desktop rather than from the boot-sector.

Full screen

A few of you have written with details of how you can write to the border, with the effect of increasing the low res screen above its usual 320 x 200 pixels. Now a French team have produced an art package which will display pictures on a larger screen. Full GFA Basic and assembly source code is included so you can put them into your own programs.

Contact Computer Connections on 03548 590 and ask for disk 775.

Multi-function chip

How do I program the MFP 68901 interrupts, particularly the horizontal blank?

James Mulligan, Scotland


```
TEXT 80,80,"THIS IS A
FONT No." + STR$(F) +
+ "NAMED " + FONT$
-INP (2)
NEXT F
-VST_UNLOAD_FONTS
RESERVE
```

The program reserves memory for the fonts, gets the number and names of fonts installed with GEMDOS. The "F" loop runs through the fonts and prints them on the screen one at a time, waiting for a key press after each has been displayed. The fonts are then cleared from memory and the reserved memory is cleared.

3. 1st Word Plus (£58.95, Mail-Centa # 0332 204 007), has printer drivers in ASCII form, which you can study in conjunction with your printer manual to see how the Escape codes work. Basically you can set the printer from within GFA Basic by using the PRINT CHR\$(xx) command from your program, where xx is the decimal value of the particular function you wish to alter.

All Escape codes are listed in your

printer manual. Because each type of printer has its own set of commands, the best thing you can do in your program is to set your commands to match Epson FX Escape codes. Most printers are able to use these codes. Another option is to write your program so that you can enter your own codes to match your printer. As for a standard format, different programs seem to use different ways of deriving the printer drivers, making them incompatible with other programs.

GFA or machine code?

1. Is GFA Basic suitable for creating games? 2. How would I put music from my hi-fi into the game? 3. What is machine code and what is the difference between this and BASIC? 4. Does GFA Basic handle sprites well, and are they easy to produce?

John Dough, Worcs

stf: 1. Yes, GFA is suitable for programming games as long as speed is not a major consideration. If, however, you wish to program shoot-'em-ups or fast

scrolling games, learning machine code would be an advantage. (GFA Assembler was given away on STF 34). You may find that STOS is more suited to games programming with its wide variety of graphics and sound commands.

2. To use music recorded from your hi-fi you would have to use a sound sampler, but beware of breaking copyright laws. The best solution is to write your own tunes using a PD program like Soundtracker or the XBIOS Music Construction Kit. Both cost £1.25 from PDSSC (# 0354 8448), Soundtracker is on disk M022 and XBIOS is on disk M020.

3. Machine code, also known as assembler, is a low level language which enables you to directly program your ST, unlike BASIC or other high level languages (C or COBOL) which have to be compiled and linked before use. This makes machine code much faster and gives more efficient use of memory, shorter program length and freedom from the operating system.

4. GFA has a built-in sprite command, but sprites are limited to 16 x 16 pixels in size. Pseudo-sprites can be easily pro-

duced using the GET and PUT commands. To create a sprite from a picture loaded on-screen use the command:

```
GET x,y,x1,y1,A$
```

A\$ holds whatever is in the area defined, x and y are the top left corner coordinates and x1, y1 are the bottom right coordinates of the area. To place the sprite onto the screen the command PUT is used:

```
PUT x,y,A$,n
```

Only the top left coordinates are required to put the sprite back onto the screen, and an optional number n which can have a value between 0 and 15. This number tells GFA how the data is to be written to the screen, three being the value most commonly used, where the new sprite is transferred on to the screen replacing anything that was there before. See your GFA manual for a full explanation of the various modes for writing data to the screen using the PUT command.

SCART cable for VCR



Is there an external drive that is compatible with both the ST and the Amiga machines? And can you tell me where can I get a SCART to Philips CM8833 Mk2 monitor, not for either of my computers but for my VCR?

M A Wheedlin, Bolton

stf: The answer to your first question is no, there is no single drive compatible with both of your

machines. Your second question is a bit more interesting. Because a VCR SCART connection uses composite video for its video signal, you need a SCART to CM8833 Mk2 composite video lead and switch the monitor from RGB to composite video. This is done via a small button on the back of the monitor marked CVBS/RGB. The composite video input is a phono socket on the monitor, so a standard SCART to phono TV lead should do the trick. Maplins (# 0702 554161) supply a lead for £8.95 that is exactly what you need, part number JW38R.

Illegal? Me?



I have read in magazines, including ST FORMAT, that it is illegal to copy or back up games software. In Knights of the Sky and Populous 2 the manual says that you must make a backup copy. If I do this will I be breaking the law?

Matthew Garside, Derby

stf: It is illegal to copy or backup software unless it specifically gives you permission to do so in the

stf: This chip can be connected to 16 devices, each of which is controlled through a bit in the various MFP registers. Compute!'s Technical Reference Guide, volume 3 (ISBN 0-87455-149-8) has details of which devices are controlled by which bit. To take an example, Timer B, which signals an "event" for each horizontal blank, is assigned to bit 0 of each of the A registers.

To take advantage of the MFP chip, an interrupt handler needs to be installed. A handler is simply a routine that runs automatically each time an interrupt on the appropriate device occurs. So the RS232 clear to send (CTS) will trigger an interrupt, if one is installed, when the RS232 is ready to send a signal. The interrupt handler could then be responsible for sending it.

To install an interrupt handler, its address is placed in the MFP vector table, beginning at memory address \$100, and the relevant bit set in the Interrupt Enable (register A at address \$FFFA07, register B at \$FFFA09) and Interrupt Mask registers (\$FFFA13 and \$FFFA15) to open the interrupt channel. This can be done directly or by using the XBIOS Mfpint function.

Once an interrupt occurs, the Interrupt Pending And Interrupt In Service register (\$FFFA0F and \$FFFA11) bits are set automatically, stopping any other interrupts on that channel. These must be cleared so that the interrupt can be used again. The Pending bit is cleared automatically, but the In Service bit must be cleared by your routine. The interrupt must return with rte, not rts.

Horizontal blanks are not, strictly speaking, MFP interrupts, but are controlled by Timer B, which is in turn controlled by the MFP chip. See ST FORMAT issue 38 for details of how these are installed.

Printing from the registers

How do I print the contents of a data or address register to the screen?

G Hodgson, Staffordshire

stf: If the register points to a string, that is it contains the memory address where a string is stored, the solution is simply:-

```
move.l #string,a0 *point ↓
a0 to string
move.l a0,-(a7)
```

```
move.w #9,-(a7)
trap #1
addq.l #6,a7
data
string dc.b 'this is a ↓
string',0 *don't forget the 0
```

Since all computers store text in a different way to numbers, printing the contents of a data register is more complicated. As you probably know, every character has a code known as an ASCII code. If you want to print that character you need to ask the computer to print the ASCII code.

Fortunately converting a number to its ASCII equivalent is simply a matter of adding it to 48. First though we need to convert it to decimal, again a simple matter of dividing by multiples of ten. The following will convert the low byte of d0 to text and point a0 towards it. Load d0 with the number, branch to this subroutine, then use the first routine to print it.

```
bin_to_dec
movea.l #buffer,a0
movem.w d3-d4,-(sp)
move.l a0,a1
```

```
move.w #100,d3
bsr div_by_d3
move.w #10,d3
bsr div_by_d3
add.b #'0',d0
move.b d0,(a1)+
clr.b (a1)
rts
div_by_d3
divu d3,d0
move.w d0,d4
clr.w d0
swap d0
add.b #'0',d4
move.b d4,(a1)+
rts
bss
buffer ds.b 4
```

Try adding code to print larger numbers, you could also work out how to check for a negative number and to ignore leading zeros.

If you can't manage all that you do have the option of cheating! All you have to do is get yourself a copy of Assembly Language Subroutines for the 68000 by Leventhal and Cordes (ISBN 0-07-707150-6) which shows how to do all this and more.



MUSIC AND MIDI

Tim Tucker dips deep into the postbag and comes out with this selection of questions

Yammy link up?

I have a Yamaha VSS-200 keyboard with a sound sampling thing on the back. Can I connect it to my 1040 STE? What leads do I need?

Geraint Richards, South Wales

stf: The VSS-200 has the sampling capability built-in, but it doesn't have any MIDI ports, which unfortunately means that it can't speak to your ST. The only answer is to get yourself a MIDI keyboard, which you can attach to your ST using standard MIDI leads available from any music shop.

Problems on the E20

When using Roland E20 synth with MIDI programs, say *Sequencer One*, it's difficult to assign channels. Roland say it's not the best keyboard to use because it's not very user-friendly. I want to record and add on while previous tracks are playing back.

Mike Chilvers, Middlesex

stf: With the E20 you can't actually assign MIDI channels, they are predefined as follows:

Channel 2 – manual bass
Channel 3 – lower keyboard
Channel 4 – upper keyboard
Channels 5, 6 and 7 – accompaniment instruments (transmit and receive)
Channel 8 – accompaniment Bass
Channel 9 – receive only Channel
Channel 10 – drums (manual and accompaniment)
You can change sounds on Channel 9 by

sending MIDI program change messages from your sequencer on, er, Channel 9. You might have to experiment with this to see which numbers bring up which sounds. You should disable the MIDI clock set on your sequencer because it causes the auto-accompaniment section to start playing. If you want auto-accompaniment parts to play on a different channel, record the MIDI information to your sequencer and change the channel of the part in your edit screen.

What is high res?

I have a couple of programs which only run in high res. I saw the Philips CM8833 Mk2 advertised as a high res colour monitor, but have been told this is not so and that I would need Atari's own mono monitor to run high res. Also, can a high res monitor be used in medium and low res?

D Wallace, Glasgow

stf: The trouble is that different companies have different definitions of what constitutes high resolution. Atari's definition of high res is 640 by 400 pixels on the screen, which the Philips monitor is not capable of producing. As you suggest, Atari's own high res mono monitor can do the job. Unfortunately you cannot use the high res mono monitor in low and medium resolutions, but this is usually not a problem because most programs that run in lower resolutions can run in high res also.

Games could always be played on your TV too, if you want the colours. If you want to get a monitor that produces all three resolutions, you're looking at a multisync monitor. These are very convenient, but also extremely expensive. In

fact, it's usually cheaper to buy both a colour and mono monitor than it is to buy the multisync.

Off balance

I have an STE with a Philips CM8833 Mk2 monitor. The sound from the left speaker seems to be much louder than the right. Is this a fault on my STE or is this normal?

Simon Welch, Birmingham

stf: This is not normal behaviour from your equipment – you have a problem with either your STE or your monitor, where the left channel has probably gone down. Contact Evesham Micros on 0386 446441 – they should be able to fix the problem, and they charge a fixed rate of £55.

Synth or sampler

I have two different sequencers, *Sequencer One* and *Pro 12* from STF 30 and 39. What I would like to know is whether I should buy a sampler or a synth keyboard, or both. What should I buy for a budget of £400?

F Salami, London

stf: To start off with you should get yourself a multi-timbral synth/keyboard, which enables you to make multi-instrumental music using the programs you already have. For a little more than your budget you could get the Kawai K4 synth (£499 Kawai 0202 296629), which offers 128 PCM sampled sounds internally, which you can edit yourself. You can create music using eight different parts, including drums, so you shouldn't need any other sound sources, whatever music you're creating. You

could certainly get a good deal on the synth second hand if you looked around the high tech music press classified columns.

Hardware samplers are very expensive, most of the good ones coming in at over £2,000! If you want sampling capabilities, look no further than your ST itself. You can buy a sampling package made up of hardware and software that turns your ST into a sampler. The *Replay 8 Sound Sampler* (£59.95 Microdeal Ltd 0726 68020) is a great package to start off with. It gives you the ability to record samples directly into your ST, and it comes with a software sample editor to manipulate your samples, as well as a drum machine program to make music with the samples you create. You can also use the samples in *Sequencer One* and mix them with the music coming from your MIDI keyboard.

FM Stereo?

I am considering buying a Philips CM8833 Mk2 monitor. I read that it produces stereo sound – can it still produce stereo sound with a 520 STFM, or do I just get a mono sound output from the monitor?

Ben Jones, West Midlands

stf: The Philips monitor only gives you stereo sound if the computer it's connected to outputs sound in stereo. Unfortunately, the STFM can't do this. The STE, on the other hand, can, so if you're really interested in getting stereo you need to upgrade your ST as well as the monitor. Alternatively, hang on until the Falcon appears – that not only gives you stereo sound, but 16-bit, CD quality to boot.

manual. In these cases, because the manual instructs you to make backups, you are not breaking the law. It is still illegal to make copies and pass them on to others – the backups are strictly for your own use.

Bundle of woe

Where can I get my joysticks repaired – both of mine don't move to the left. I have bought someone's disk collection and some of the games do not work – is this because he had an STFM and I have an STE?

If I had a Canon PW1080A printer, could I use it with my machine and what is the best spooler to use? And finally is there anything I can do to repair my games disks which I accidentally virus-killed?

M Davis, London NW1

stf: It is probably better to get a replacement joystick rather than repair the ones you have – repairing the old ones could turn out as costly as getting new ones. Many older games do not run on the STE and have not been updated – it is best to contact the producers of each game or software package you are having trouble with, there is usually an

address in the documentation.

If the Canon printer has a standard Centronics connection then you should be able to connect the machine up with a standard parallel printer lead from any computer supplier. Try Epson drivers supplied with software because most printers work with these, if not, then experiment with others. Any spooler utility should do the trick, Turbo602 from Cover Disk 37 (turn to page 58 if you don't have a copy) is as good as anything else in this respect.

You've got a bit of a problem if you have wiped out your games. The Ultimate Virus Killer can repair many games (about 700 at the last count) but you may have games that are not included in the UVK program. In this case you have to contact each game producer by letter explaining your problem and enclose the master disk – they should be able to help you out.

UVK costs £9.99 from Douglas Communications on 061 456 9587 or from our mail order offers on page 128.

More SCART problems

I am trying to get the correct SCART lead between my STE and a Sanyo 21FST TV. Can you help?

A F Abdalla, London NW10

stf: If you have a normal TV rather than a TV/Monitor then you need an STE composite video to SCART lead rather than an RGB SCART lead. Contact Meedmore on 051 521 2202 and have details of your TV handy – if they don't have a ready made lead in stock they can make one for you.

Which machine?

1. I want an ST for working, drawing and playing adventure games, would you advise the 1MByte 520 STE or the 1MByte 1040 STE?

2. Why is a 1MByte 520 STE cheaper than a 1MByte 1040 STE?

3. What does RAM stand for?

4. Can you play ST games on an STE?

5. How do 520 and a 1040 STEs differ?

P Horn, Cumbria

stf: 1. Both machines are identical so either is OK.
2. The 520 machines are cheaper because they are usually supplied with games, while the 1040 is usually supplied with expensive productivity software.
3. RAM stands for Random Access Memory.
4. All new games which are written for the STFM run on an STE, but some older ST games may not.
5. The only difference between the two machines is the label – internally they are identical.

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Which computer(s), if any, do you own?..... 84E

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 ISSUE 2 • DECEMBER 1992
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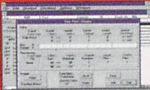
Kick Axe!

We put the Roland GR-1 guitar synth through its paces

ZOOM IN
The Zoom 9001 effects processor - great results from a small source?



CUBASE FOR WINDOWS
How does the new PC sequencer measure up? We test it and tell all



ROLAND JW-50
Our comprehensive test of Roland's new workstation



ISSUE 2 DECEMBER 1992

Future PUBLISHING

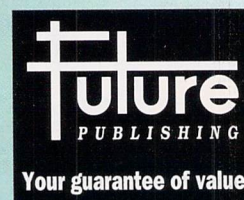
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Take control of your music!

ADVICE Your queries answered

FM Gem
Q I've been looking for a portable FM synthesizer for a while now. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

Local problems
Q I've been having trouble with my Roland GR-1. It seems to be having problems with the keyboard. Can you help me with this?

Learning with the PC
Q I'm interested in learning more about the GR-1. Can you provide some information on how to use it with a PC?

Time to expand
Q I'm looking for a new synthesizer. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

Mysteries of the universe
Q I'm interested in learning more about the GR-1. Can you provide some information on how to use it with a PC?

Download depth, and
Q I'm looking for a new synthesizer. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

Sampling on the ST
Q I'm looking for a new synthesizer. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

Too many notes
Q I'm looking for a new synthesizer. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

LEAD editor wanted
Q I'm looking for a new synthesizer. I want something that's easy to use, has a good sound, and is reasonably priced. Can you recommend any models?

REVIEW Roland GR-1 • 4899 • Guitar synthesizer

More on the floor, but not underfoot
The GR-1's front panel controls are a real treat. The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

Fingertip control
The GR-1's pickup you attach to your guitar is a real treat. The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

Road test
The GR-1's front panel controls are a real treat. The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

Technical Specifications
The GR-1's front panel controls are a real treat. The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

Alternatively...
The GR-1's front panel controls are a real treat. The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

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Technology plus creativity

Don't just listen - play!

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Looking for the right piece of hardware or software for you? There's a lot to choose from out there! Let us help you with the Future Music Buyers' Guide.

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We're looking for information on new products and services. Please send us a copy of your product literature or a short description of your business.

Contacts
We have a list of contacts for manufacturers and distributors. Please send us a copy of your product literature or a short description of your business.

Future updates
We'll be updating this guide regularly. Please send us a copy of your product literature or a short description of your business.

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This section contains information on hardware products. Please send us a copy of your product literature or a short description of your business.

Buyers' Guide - Software
This section contains information on software products. Please send us a copy of your product literature or a short description of your business.

Take control of your synth
Modern synths offer great power, but can be hard to control. David Hughes assesses the synth interfaces and controls that put you in charge.

Liquid crystal ball time
The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

Classic sounds, with knobs on
The Roland GR-1 is a guitar synthesizer that's designed to be played like a guitar. It has a full-sized keyboard and a variety of controls that allow you to create a wide range of sounds. The front panel is easy to use and the sound is excellent.

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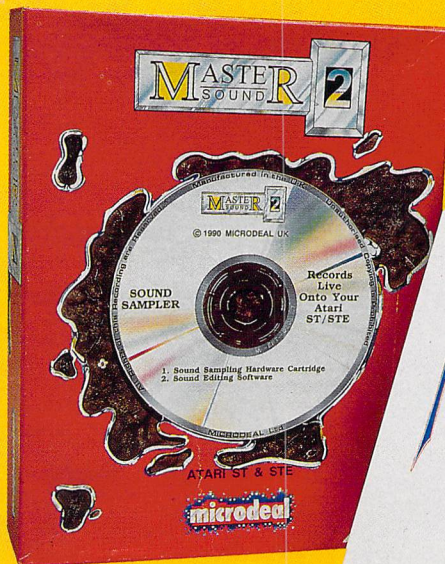
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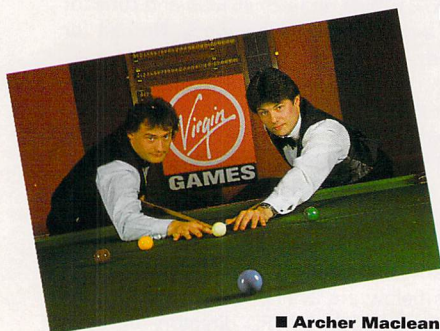
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RANT

Archer Maclean, who programmed *Jimmy White's Whirlwind Snooker* and the forthcoming Archer Maclean's *Pool* on:

The ST... The ST's a good machine, but it's going downhill because the industry keeps talking it down. It's a self-fulfilling prophecy. You only have to look at the ABC of **ST FORMAT** to realise there is a considerable number of ST owners out there. Many conversions onto the ST from other machines are not done by the best programmers for the job and often seem to be done on the basis of "get it done as fast as you can" or "never mind – that'll do" type of attitudes. I know for a fact that *Jimmy White's Whirlwind Snooker* has sold a damn sight more ST units to date than any of the doom and gloom merchants could ever imagine. The ST version of *Pool* is going to be 20 to 25% faster graphically than the Amiga. The two music bits aren't going to be as good as the Amiga's samples, but they only occur during the title sequence and the Hall of Fame – apart from that the two versions are pixel identical in just about all respects.

The future of games... In a couple of years time you'll see the full-priced games market polarised between PCs and the consoles, with most other machines somewhere in the middle with a small market share to fight over. The new Amiga 1200 is a technically fabulous machine with about four to five times the power of existing Amigas, and, without a keyboard and disk, it could, technically and perhaps on price, kill all known consoles **dead** in a big way and set the standard for years to come. But, I don't think Commodore have the marketing clout to do that.



■ Archer Maclean
- lover, fighter, software developer
and cocktail waitress. Is there no end to
this man's considerable talents?

The Falcon... I haven't got a Falcon yet, because I simply have too much to do as it is. The Atari stand at the **ECTS** show was a serious disappointment. The bloke I was trying to get some answers from really didn't know anything at all. He was handing out a very simple and very badly printed A5 sheet of text with nothing conclusive at all on it. He couldn't demonstrate anything proficiently at all. The **so-called** demo software consisted of a few high res colour images of parrots and one or two other things – it reminded me of the way people used to demonstrate the static colour images of the new-fangled colour graphics systems of ten years ago. For such an expensive stand at the show, they clearly hadn't spent any money on having some half-

decent demo software to sell the machine with. I don't think I'm wrong in saying that brain-shakingly good visual and sonic demo software has helped establish and sell more computers over the years than any other form of computer advertising, except, perhaps, successful hype. I even suggested **(to Atari)** that the power of the machine might mean that a 256 colour version of *Pool* with trigonometrically correct numbers rolling around the ball as it rotated, but the salesman couldn't confirm resolutions, colour ranges or processor speed. All I got was a few ums and a few erms chucked in for good measure. I hope for Atari's sake they've sorted out this type of approach and paid reasonable money to reasonable developers to produce some **decent software**.

Consoles and hype... How many people can afford **£65** in a recession for a game like *Street Fighter 2*? It's a good game and it may be a 2MByte cartridge, but I'm pretty certain the manufacturing costs of a 2MByte cartridge are not twice or four times that of the more common 1MByte and 0.5MByte versions going out on the street for £30 or £40. Although I'm surprised it's done as well as it has. But, you know what sells more carts than anything else? Hype, pure and simple. Hype of the ram-it-down-their-throats variety that costs heaps too. Unfortunately, this approach means the best product is often not the one which sells the most. If it's any consolation, *Dropzone* is shortly going to be available on the NES and Gameboy for £20-£25. The NES version is brilliant, seriously addictive, and does things with the graphics I haven't seen on any other NES game.

If you are remotely interested in comms you're probably thrilled to know that we've started up our own bulletin board service.

Clive Parker reveals the sordid details of how you can link your machine to ours...

The ST FORMAT Bulletin Board Service

Call: 0225 461330 24hours a day, seven days a week

Sysop: Clive Parker

Operating speeds: 300, 600, 1,200, 2,400 and 9,600 baud

CALL ME A COMMIE

The *STF* BBS is provided as a service for you to log on and leave messages for other readers and the *ST FORMAT* team, leave queries for *ST* Answers or *Gamebusters* and leave letters for *Feedback*. In fact, you can chat about any subject to anyone – you can even talk about Madonna's various fetishes if you like. Whether you get any replies about her is another matter – topics have to be of interest to more than one person.

We provide the latest and best PD software as well as the best software, games and demos from over 50 *ST FORMAT* Cover Disks. In fact, you can download all the Cover Disks in compressed form so you can catch up with all the software you may have missed going right back to 1988. The only portions of Cover Disks that are not available are commercial game demos that are subject to copyright.

Our textbase provides useful text files on *ST* subjects that you can read on-line or down-

load to your machine and read later. The first of these text files is to be a comprehensive list of *ST* related contact phone numbers and addresses. If you have an interesting item in a text file you can upload it to the board for everyone to read. All the latest news from around the *ST* world will be posted on the board for you to read while you're on-line in our regularly updated news section.

Best of all, the *STF* BBS is to gradually expand and change to provide the best on-line service available for *ST* owners anywhere.

The BBS has started with a single line running at speeds of up to 9,600 baud, but we are going to add at least one extra line soon with the possibility of another one after that. Remember: the *STF* BBS is on 0225 461330 and runs for 24 hours a day, seven days a week. No rest for the wicked!

You need this to call us

So you want to get on-line to *ST FORMAT*, do you? Well, you're going to need some comms software in that case. There are some very good programs available in the PD that you can use, usually they are as good as – and sometimes better than – any commercial offering. Both the programs below are available from most of the PD libraries listed in our PD directory on page 125.

**FZT Freeze Dried Terminal v2.10
MERLIN PD SOFTWARE – DISK MPD0973**

Freeze Dried Terminal, or *Fizzydizz* as it has become known in the comms world, is becoming

WHAT'S A BBS, THEN?

A bulletin board is a special type of comms program that is constantly running on an *ST* connected to the BT phone system by a modem, and usually run by a dedicated enthusiast at home for a hobby. The service is designed to act as a message and file base, and people

can ring the BBS using their *ST*s and modems to connect to the board to "log-on." While connected to the BBS you can read open messages between other callers, read private messages left by someone for you, leave private messages, send (upload) PD programs

to the BBS, receive (download) PD programs from the BBS and receive and send private files to and from other people. BBS services can offer specialist areas such as MIDI, games or programming. Any hobby can be a subject area on a BBS service.

THE ULTIMATE JARGON BUSTERS GUIDE



BAUD RATE: The number of bits of data per second that can be transmitted by a modem. Those mysterious "V" numbers (V22, V23 etc) are simply shorthand codes for the various baud rates. You should set your systems baud rate to the fastest speed that both your modem and the remote system is capable of. The higher the baud rate, the less time you spend on-line. Beware of modems marked V23 only, these are only capable of 1200/75 split rate speeds that is not supported by the majority of comms software and BBS services.

COMMAND STATE: When your modem can accept commands from your machine.

DATA COMPRESSION: The process of compressing information to transmit more information in less time.

DCE: Data Communications Equipment – in other words, your modem.

DIRECT CONNECTION: Standard modem connection without error correction, compression or flow control.

DOWNLOAD: Receiving a file

from a BBS to your machine.

DTE: Data Terminal Equipment, this is your computer.

E-MAIL: A private message either to or from you.

ERROR CORRECTION AND DATA CORRECTION PROTOCOLS: Agreed methods of transmitting error corrected and data compressed information. MNP 2, 3, 4 and 5, V.42 and V.42bis are some common protocols.

ERROR CORRECTION: A means for verifying that data is transmitted correctly, commonly built into

hardware on more expensive modems.

F-MAIL: A message with a file attached, only the receiver of the message can get the file and this can be extracted and used at a later date.

FLOW CONTROL: Buffering system that enables the computer to modem rate and the modem to modem rate to be different. Data can be sent at a higher speed to the modem from the computer than the modem can send over the phone lines, the modem compresses the data to increase data flow speeds.

PAYING FOR INFORMATION

CompuServe and Cix are rather different from the standard BBS service. For a start, they are both huge, with hundreds of thousands of registered users. The other main difference is that you have to pay for these services – not just your phone bill but also how much time you spend on the service is charged to you on a quarterly basis. This means that it can

be quite a costly way of getting hold of software and information.

The different support areas cover all types of computers from the oldest to the newest, along with areas for sport, news, finance, art, graphics, music, film, TV and video, science fiction and so on. In fact, if you can think of a subject that is not covered on CompuServe then they will proba-

bly start a specialist area for you. The ST support area has a section set aside for US software and hardware producers, so you can contact them directly if you have any problems or ideas (such as how to get hold of their products) that may be of interest.

You can also contact ST FORMAT on CompuServe, simply leave a message or mail for our ID

number which is 100012,2571. The comma is part of the ID number and cannot be left out when leaving mail or messages. Get on line to Compuserve on 071 437 4393 (up to 9,600 baud) and CIX is on 081 390 1244. Using these services is not cheap, and to get an account with CIX you need a credit card. You have been warned. Bruise that plastic.



■ These large friendly buttons make Fizzydizz a great comms program. Not for the beginner but still reasonably simple to get to grips with.

ing the most popular program available for hardened comms users. This is largely because it has a huge number of functions for the comms addict to get hooked on.

It has a built-in text editor, so you can write and store messages ready for transmission to a BBS, a variety of transfer protocols ranging from X-Modem to Z-Modem, a comprehensive auto-dialler, the ability to record and set up automatic log-on macros, 40 normal macro slots, a full disk utility section and the ability to run script files. All text received by the modem can be captured by Fizzydizz and saved as an ASCII file to disk for you to peruse at your leisure. The program is easy to learn with large buttons for almost every option and you should consider registering with the author to get the full version for a meagre \$25.

Vanterm 3.8

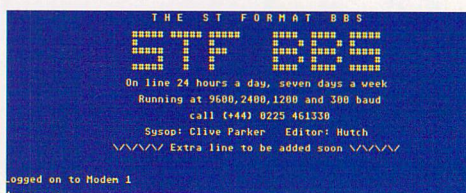
MERLIN PD SOFTWARE – DISK MPD0049

Vanterm is another excellent PD comms package, and even though it has been around for a few years it is still one of the easiest to use. It has an excellent built-in help system which

enables you to find out what a menu option does simply by double-clicking on it. While in Help mode an information window appears with full details on how to use the option selected.

The program enables you to contact all BBS services and can be used to transfer software using most of the popular protocols available. To make up for this you can launch and run other programs from within Vanterm, so you can use one of the many PD Z-Modem utilities around.

Options abound within Vanterm, including a full disk utility menu, a text capture facility and



■ Hello, the ST FORMAT BBS? What's that then? Using Vanterm, logging onto our ST-based BBS is as easy as phoning up Cricketline.

easy to configure settings. Helpful touches like the passwords for the BBS being called are assigned to the left and right cursor keys. Vanterm is highly recommended if you're new to the ST comms scene.

The hard stuff

To enter the wonderful world of comms you need a modem. Try the Best 2400 Smart One Modem from HCS (£ 081 777 0751) – at only £59.95 it is a low cost reliable unit and well worth the outlay. Another winner is the Supra 2400 modem from First Choice (£ 0532 319444) which has recently dropped to £79.99. Supra modems are well known for their reliability. Both can transmit and receive at 2,400 baud; faster modems are available but cost a bit more. The Supra-Fax Modem enables normal connections at speeds of up to 9,600 baud and with the appropriate software can send and receive faxes. These extra capabilities are reflected in the price of the modem, a rather tasty £259.99. It's available from those First Choice chaps. **stf**

ORIGINS

The STF BBS runs on MichTron BBS 3.0 software and has been customised for ST FORMAT by Andy Curtis and Dave Meaker of the Ad.Lib BBS (091 370 2659) – many thanks to them for their help. MichTron is a

very adaptable package because modules providing extra functions and services can be written in the special MCL language and added to the BBS. Ad.Lib provide a module writing service to you if you have the

MichTron BBS software, creating add-on modules to order for a small fee, of course. Ad.Lib is also an MNET member, where MichTron BBSs link up to pass messages and information on to each other.

LOCAL MODEM: The one on your desk.

LOG ON: enter a BBS system, usually by entering your name followed by a password that only you and the BBS know.

MNP: Microcom Networking Protocol, methods of error correction and data compression.

MODEM: MODulator/DEModulator, that box which converts signals from your ST into a form that can be transmitted over the phone lines and back again.

NEGOTIATION: also known as Detection, this is when the modems "talk" to each other to set a connection rate and protocol.

NORMAL CONNECTION: The same as a Direct Connection but with flow control, this connection does not support error correction or flow control.

ON-LINE: this means that your machine is connected to another machine via the modem enabling communication between them.

PARITY: A method of checking that a file, or part of a file, has

been transmitted correctly.

REMOTE MODEM: The modem that you are connected to over the phone lines.

RS232 SETTINGS: These settings must be the same on both your machine and the one you are trying to connect to if you're going to be able to make a connection. The most common settings on a BBS are 8 data bits, no parity and one stop bit, referred to generally as 8-none-1. Most comms software is usually set up with these settings.

SYSDOP: The SYStem OPerator, the

person who runs the BBS. Large systems such as CompuServe have sysops for each section of the board.

UPLOAD: Sending a file to a BBS from your machine.



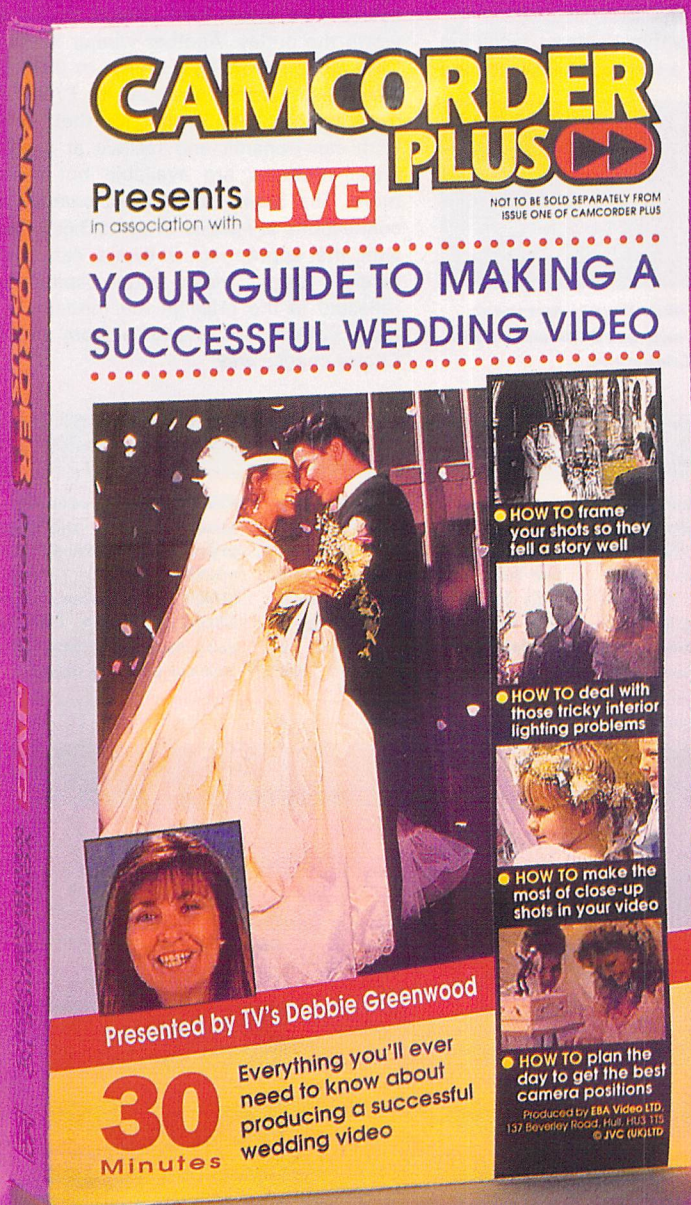
■ With your RS232 options set like this in Vanterm you are ready to rock! Well, log on to a BBS anyway.

COMING SOON..!

From the people who brought you this magazine

CAMCORDER PLUS

Your essential guide to choosing and using a camcorder



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- Find the best buys - complete listing of every camcorder on the market, plus accessories
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- DARK GLASS SCREEN
- GREEN SWITCH TO SIMULATE MONO DISPLAY
- AMIGA, ST, PC COMPATIBLE
- CABLE REQUIRED
See Accessories below

USING A TV?

**Switch to a monitor and
SEE WHAT YOU'RE MISSING!**

*If you are currently using your ST or Amiga
with a domestic television set,
then you are missing out on picture quality.*

Unfortunately, because your TV is used to receiving inferior UHF transmissions from the airwaves, it only has a UHF socket. So, your computer has to downgrade its high quality digital RGB (Red, Green, Blue) signal to UHF to enable your TV to receive it. However, because your TV can only display using RGB, it has to convert the UHF signal back to RGB before it can put a picture on the screen. Of course, every time you convert from one signal to another, there is a loss of quality which means that the final picture on the TV is not as good as the original signal from your computer.

You can overcome this with a monitor, which has an RGB socket, not UHF. Your computer will recognise this, and send its original RGB signal to the monitor which will display the image directly to the screen with no loss of quality.

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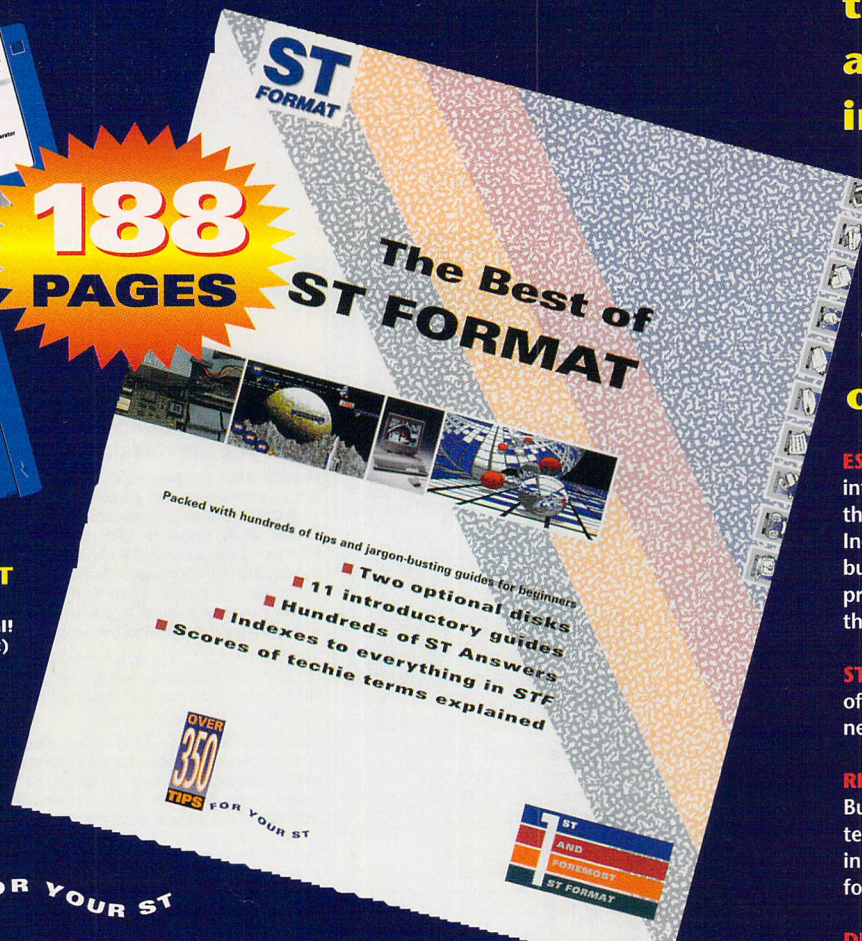
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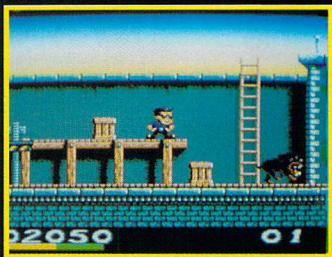
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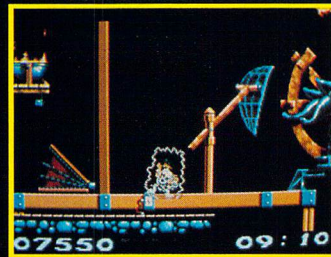


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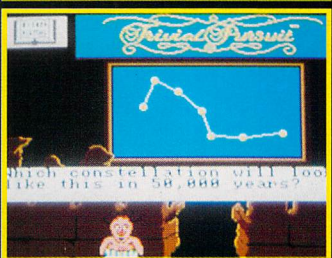


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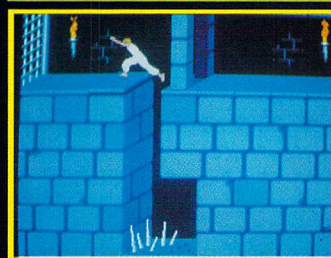
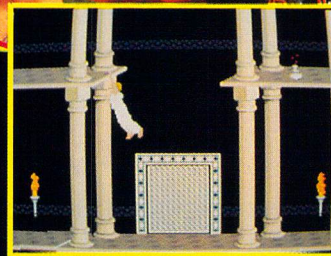
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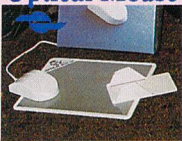
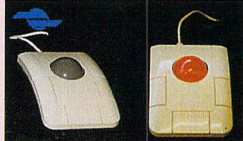
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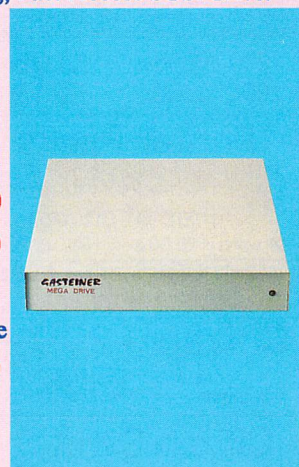
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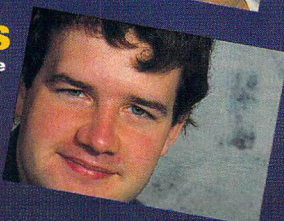
ANDY HUTCH

■ Andy spends Saturdays down his local rave emporium. "It's great - I can stand there and rave on and on for ages and nobody listens to a word I say." So, it's a bit like being at work then? "Erm, well, yeah."



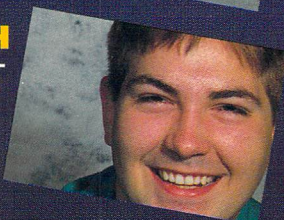
ED RICKETTS

■ Ed can't think why he does it, he just does. He likes to wander into ladies' hat shops and try on all the see-through plastic head scarves. "The ones with the dog patterns on are the best," he says.



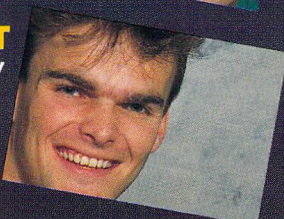
JAMES LEACH

■ When James pops into his local DIY superstore he always takes a tape measure with him. "There's nothing more satisfying than measuring cut timber, the smell of the wood is fantastic." Yes, James.



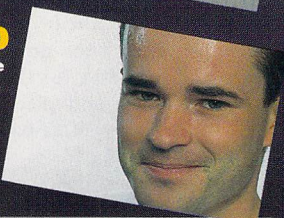
RICH LONGHURST

■ Rich likes to stand next to the stationery counter in WH Smith's and poke his tongue out at anyone who buys a packet of A4 ring reinforcements. "The ones you have to lick yourself really do it for me," he confessed.



ROB MEAD

■ Rob's favourite shop is Mandy's massage parlour. "You get a really good mud bath, a rub down and a packet of bubble gum for only £75. It's worth the money for the gum alone - it lasts ages."



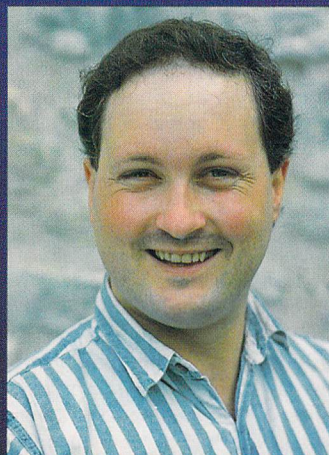
SCREENPLAY

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DRIVE YOURSELF MAD

CLIVE PARKER



■ Clive likes junk shops. "So far I've managed to get an Amoeba, a PC and a Spectrum for only 25p each. It's amazing what rubbish you find in these places."

PETER CRUSH



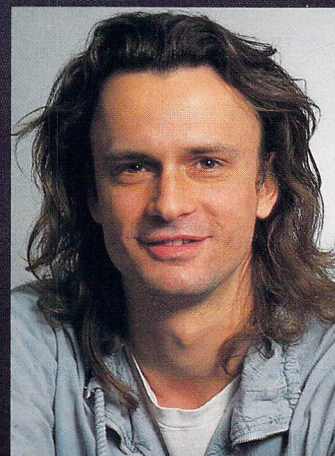
■ Pete gets all his footy shirts from Oxfam. "Fashions in the football industry change so quickly I'm sure my '72 Dukla Prague away strip is back in vogue."

ANDY CURTIS



■ Andy doesn't like shops, or high streets. In fact, he lives in a tree house in Epping Forest and wears clothes made out of oak leaves.

CHRIS LLOYD



■ Chris met his girlfriend in a New Age shop. "Our eyes met over a rainbow coloured crystal ball and we've never looked back since."

THIS IS SERIOUS

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Ah, the joys
of ancient
Rome.

Rampant
orgies,
tortured
slaves,
oppressed
natives,
crucified
Christians
and corrupt
emperors.
Richard
Longhurst
calls that a
civilisation

CAESAR

FROM: IMPRESSIONS

PRICE: £29.99

You've got to admit that the game would have looked a bit more of an attractive proposition if it had been called *Caligula*. But this is strictly an orgy-free zone, don't even think about bringing your horse, and you probably won't even need the grapes. We are talking serious empire building here.

Caesar is pretty much like the great grand-daddy of construction games, *Sim City*. You start with an empty plot of land, a mountain of money (or a modest pile if you play on the hardest difficulty setting) and the ability to pluck buildings out of thin air and plop them down on the ground. Your performance is measured against four criteria: the peace your people have enjoyed, the level of culture in the city, the prosperity of the people, and the extent of your



■ These are the sage-like fellows who give you all the information you need on the slave population, finance, taxation and your personal standing. They also stab you in the back if you give them just half a chance.

drome, which costs a whopping 300 dinar. All the buildings cost a certain amount to maintain, so your resources soon dwindle away.

But there's no point plucking and placing at random, there has to be method to your madness. First of all you need an administrative centre to collect taxes, you may even need several of them to ensure there's plenty of red tape. You need houses for people to live in, all of which have to be near a road and water supply, and so you have to build the town's infrastructure. Then you need lots of places for people to work (unless, of course, you'd rather be creating a Conservative vision of Britain), places for them to learn, places for them to go when they're poorly, places for them to enjoy themselves and places for them to pray, as well as barracks for soldiers to live in.

While you're building your finely balanced urban ecosystem, you have to indulge in the famous Roman pastime of rounding up slaves, which turns out to be a simple matter of allotting money to slave welfare. The slaves are the men, and no doubt women, who keep the city ticking over – they prevent fires, maintain buildings and keep the roads in order. If you've got enough of them left over you can send some of them off to fight in the army.

Ah yes, the army. You see, your little city isn't isolated, it's a small Roman province which is populated by barbarians, so naturally you need a few forts and cohorts to guard your city on a larger scale. Switching to the

provincial level map shows the entire province and it's here that you can do some more plucking and plonk down some forts and roads to connect the villages.

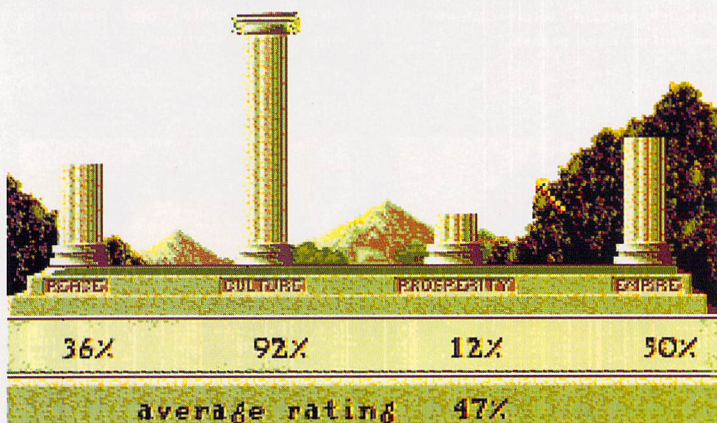
Slave management

Being in the Roman army is not an attractive proposition when there are hordes of barbarians marauding around the countryside, so you have to jack up the wages and the conscription level to get some poor suckers to serve for you. It's best to get four or five strong cohorts early on because those barbarians are nasty little fellows, and if they make it into the city they can wreck loads of buildings and can only be stopped if one of the militia men happens to run into him.

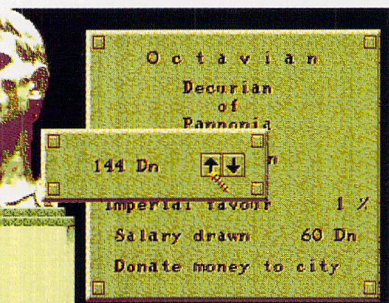
The presence of barbarians is both a strong and weak point. The good side, if you're an Impressions fan, is that when a cohort meets a horde, you have the option of switching to the Impressions' *Cohort* war game to play out the battle in detail. But for the rest of us, the chance encounters just mean clicking a couple of buttons, which gets very tedious very quickly, particularly when the hordes are so numerous and your troops are so strong that you win every time anyway.

Busy doing nothing

And to make matters worse, after each battle, the cohorts stand around waiting for new patrol orders, so it's quite possible for another horde to sneak into the city while you doing even more clicking in a frantic effort to tell



■ Your rating is shown by a typically Roman column – the higher the better. When you've achieved a minimum and an average in each, it's time for a promotion.



■ See that bust – that's you, that is. This screen shows your favour with Rome and enables you to set your own salary – but don't take too much or the people get fed up.

the cohort where to go. Another problem with the barbarians is that early on it's quite likely that they'll get into the city, which drastically reduces your peace rating, so towards the end of a level, when prosperity, culture and empire are pushing 100%, you're waiting around for the prosperity rating to creep up. It moves at around 4% a year, which means there's a lot of waiting to be done when the target is 80% minimum on each rating.

Get exploring!

But despite these irritating nig-gles, *Caesar* is a thoroughly enjoyable game to play. There are lots of factors to keep an eye on, and the manual is vague enough to leave you having to do a lot of exploration and experimentation to find the best way to achieve your objectives. Whether this is intentional is unclear because at first the game doesn't seem to gel together very well. There seems little point in plonking buildings

down only for barbarians to come and wreck them, but there's a gradual learning process as you learn to balance attending to the needs at the city level – providing slaves, water, roads, jobs and entertainment – and checking the provincial level to make sure you've got all the bases covered with regards to barbarian invasion.

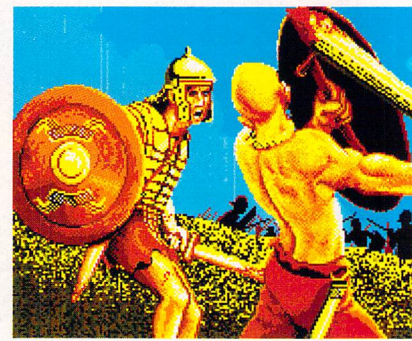
Verdict

When you've achieved the set objectives regarding peace, culture, prosperity and empire in a province, you're duly promoted and sent to a tougher province, which has more barbarians and tougher targets. But even after four or five promotions, it's easy to develop a technique to get 100% ratings in all factors, so it's not too tough to make the grade for the next promotion. For example, to get the 100% on the empire rating, all you need to

do is plonk down five or six forts and lay roads from the main city to the villages. In fact, it can get a bit tedious having to go through the same city-building process each time you're promoted. But whereas in *Sim City* there was nothing to do when your city was complete, apart from throw in an earthquake or another disaster, the prospect of promotion gives you the incentive to strive for improvement.

Who needs promotion?

If you become particularly attached to a city (it's pretty unlikely, but it might happen) you can decline the promotion and carry on building your city up, and amassing an enormous personal fortune to boot. The only trouble is, they stop paying you when you've piled up 9,999 dinar, but you can take the money with you when you're



■ Oh no, the barbarians are coming, the barbarians are coming. Stand fast, men. Remember, we're the most ruthless and well-organised army in the world.

promoted to help out if the next city gets a bit strapped for cash.

Caesar is an excellent game. Parts of it don't quite hang together well enough and there's not really enough variety from one province to the next, and ultimately it's a bit easy to suss out how to win, but even so, it's very absorbing and extremely addictive. All told, it's a bit of a cracker.

SIGHTS OF THE SUBURBS

Here we see a thriving Roman city from a couple of years before the birth of Christ. Note the typically disorganised road network, the high supply of colisseums and hippodromes in the south, and the concentrations of heavy industry in the north

All houses must be supplied with water

The forum is the administrative centre of the city. People love to live near it, and if you don't have one, you won't be able to collect any taxes

Build hippodromes to give your people somewhere to relax. They increase land value too



Depending on the value of the land, houses grow from these little shacks, to semi-detached residences, all the way up to palatial carbuncles

Industry is an essential part of any society (tell that to John Major). Surround the industrial centre with a variety of workshops

Barracks provide militia men who patrol the streets looking for barbarians and nobbing civilians

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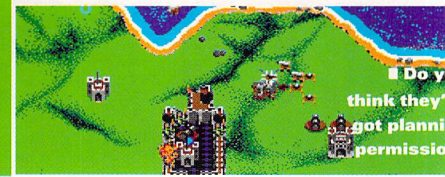
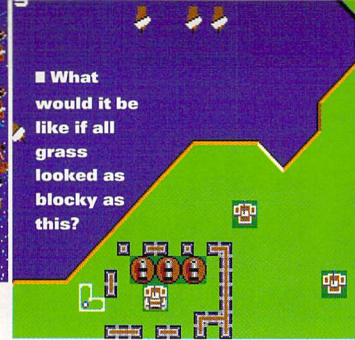
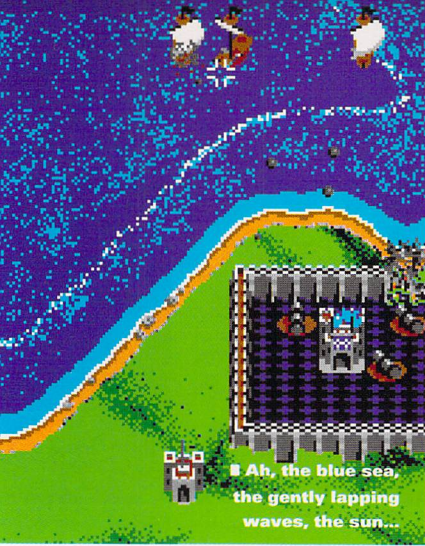
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RAMPART

SOFTWARE HOUSE: DOMARK
PRICE: £25.99

At me, those days of yore when the rich family on the block owned a castle and the best beer in town was mead. How the honest peasant toiled for the greedy land owner and his manorial family. How the witch finder general picked on the most interesting-looking women and burnt them at the stake. How people died from the plague and grew warts in very odd places. They didn't call them the Dark Ages for nothing, you know.

Times have changed (just a tad) and levels of home ownership are a lot higher (marginally) but we still enjoy a spot of siege-busting and some peasant oppression. Castle bashing is what *Rampart*'s all about. The idea is simply to defeat an invading armada of ships by cannoning the woodlice



■ Can you face this man? Can you count his teeth? Do you want to?

out of them. *Rampart* is an odd mixture of high speed strategy and plain old fashioned zapping. You can play against either your ST or your ST and another person. The best fun is definitely to be had playing against someone else since the ST's aim is deadly accurate and another human player means more targets for your ST.

It's also worth pointing out at this point that *Rampart* is for 1MByte machines, so if you've only got 0.5MByte of memory you should either get upgraded or do without this tasty arcade game.

Once you have decided whether you're a veteran player or a beginner, you get to choose your castle. Depending on the level you're on, there are between four and six castles to choose from. Some of these are better strategically for hitting your opponent, while others are better for destroying the invading armada; you have to decide whether you want to destroy your human opponent or your ST's ships. It's usually the human opponent, of course.

With the tricky business of castle choice out of the way, it's about time to position your armaments. These come in the form of cannons which you position within your castle walls. Initially

you've only got three, but as the game progresses you can fill the entire floor space of the castle with them. Once all your heavy cannons are placed, you can start the battle.

After the sampled command "Fire" you move your cursor over the enemy and fire as many times as you've got cannons. You can't fire again until the cannonballs hit their target. What's more, you have to pre-judge the position of ships; cannonballs aren't the quickest munition ever and they take a second or two to hit the target. After 20 seconds, the round finishes and you commence the task of rebuilding your battered castle. This is performed by moving a series of blocks in a *Tetris*-like manner. If you don't manage to completely encircle your castle within 20 seconds, you lose a life.

Verdict

Rampart's a medieval blast. The gameplay isn't enormously taxing on the grey cells, but this is a hugely engaging game with a long, long shelf life. *Rampart* is proof positive that it's the simple concepts which win through; it's precisely because the gameplay's a doddle that you're likely to keep returning to the game again and again. Of course,



that's not to say that there's no skill involved in learning the game; judging the shots and prioritising your targets does take a fair amount of practice.

You can't fault the graphics or sound within the game. There are some excellent, clear samples and great polished graphics. The whole game has been cheerfully designed so as not to hinder the gameplay, while the sergeant who commands you to fire and cease-fire operates like some kind of mad old referee.

There's absolutely not a shred of doubt about it, *Rampart*'s a great little game. Grab a friend, place a few potatoes around the place, cackle a bit, wear a sack and blow the hell out of each other's castle. It's a Dark Age hoot in a New Age suit. Hurrah!

BY **ANDY HUTCHINSON**

THE DEFINITIVE STF LIST OF CASTLES

1. Caernarfon Castle: gorgeous place built in 1284 in the historic county town in Gwynedd, Wales. Prince Charles was invested there in 1969.
2. Windsor Castle: the largest castle in England. It was founded by William I and first used as a royal residence by Henry I. The castle stands on the edge of Windsor Great Park, formerly a royal hunting ground. Now charred round the edges.
3. Edinburgh Castle: situated on a wonderful craggy bit of granite, this great castle was built by Malcolm Canmore in the 11th Century. It had its charter granted by Robert Bruce (try, try again) in 1392. Oh, and they filmed a *Lassie* film here too.
4. Bouncy castles: found at any school fete, fair-ground or home for the criminally insane, these

- most excellent large yellow inflatable objects are designed to be bounced upon. Lots of small children break noses and fingers on them too.
5. White Castle: chain of hamburger bars in America. They serve these diddy little burgers which are absolutely gorgeous and they have jolly impressive shops, too.
6. Disney Castle: the one that Tinkerbell flits around at the beginning of those awful Wonderful World of Disney programs which are shown on tedious bank holidays.
7. Barbara Anne Castle: British Labour politician. During a long career she has (among a variety of other jobs) been Chairman of the Labour party and Minister of Transport. Indeed, it was she who intro-

- duced the 70 miles per hour speed limit and the breathalyser test.
8. Newcastle: so named because it once had a new castle there. Lots of Geordies live there, where they drink copious amounts of Brown Ale and sing about the fog on the Tyne. Oh and they're dead hard too.
9. Colditz Castle: immortalised in the film *Horror Zombies From The Crypt*, this forbidding building was also referred to in a film about some prisoners of war during the big one in 1939.
10. Paul Hardcastle: recorded the seminal sampled hit *Nineteen* in the mid-'80s. Since then he's been the prime force behind lots of chart hits, though he doesn't like appearing the spotlight himself. He has curly hair.

BUNNY BRICKS

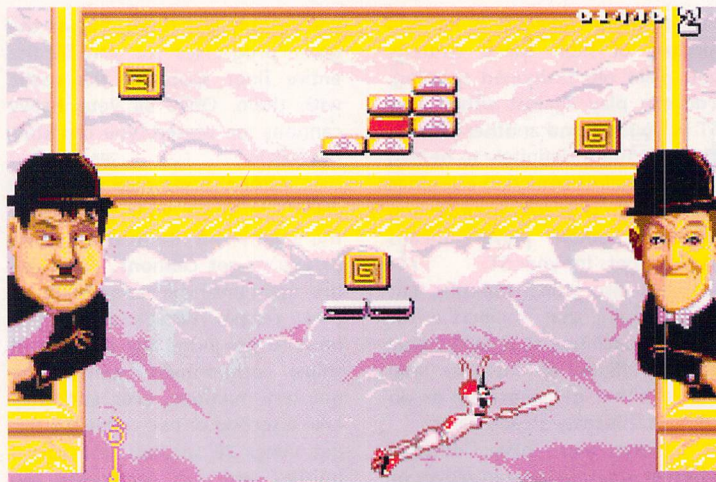


SOFTWARE HOUSE: DAZE
PRICE: £25.99

On the surface, nice fluffy bunny-wunnies and the business end of baseball bats don't quite mix, but in the topsy-turvy world of *Bunny Bricks*, anything is possible.

Bunny's girlfriend Boubou has been kidnapped by the Bongo tribe and they plan to sacrifice her to the evil god Bong – it's your job to rescue Boubou and battle through the obstacles the Bongos place in your way. Exciting stuff.

Basically, this game is *Break-out* with some cutesy animation and colourful graphics thrown in. You have to rid each of 30 different screens of all their bricks and pick up the bonuses and sort out various puzzles on the way. How-



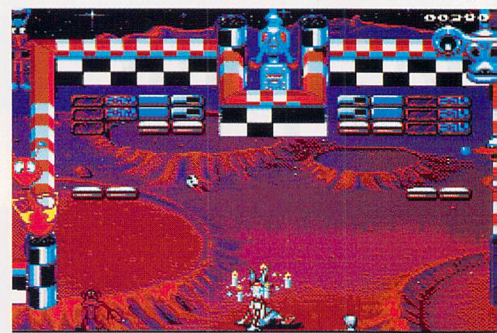
■ "Oh Ollie, what's gone wrong? Our careers have really gone down the pan."
"Course they have, Stanley, and that's because we're dead."

ever, this isn't as easy as it sounds because there are various baddies, such as Sharky, Naf Naf and even Stan and Ollie, who try a variety of tricks to stop you whacking the

ball into the bricks. For example, at one point Napoleon steals the ball and elsewhere Charlie Chaplin stands in your way. You also have to contend with various barriers and oddly-shaped walls which block your access to some of the bricks. Luckily there are also plenty of bonuses – baseball gloves, Superbat, multi-bats and so on – which can help you, but largely it comes down to how skilful you are at waggling the joystick and controlling Bunny.

Despite the "cartoon style" animation and the themed backgrounds – Bunny's stadium, Bunny's beach, Bunny's paradise, Bunny's moon and Bunny's jungle where Bong awaits – there's noth-

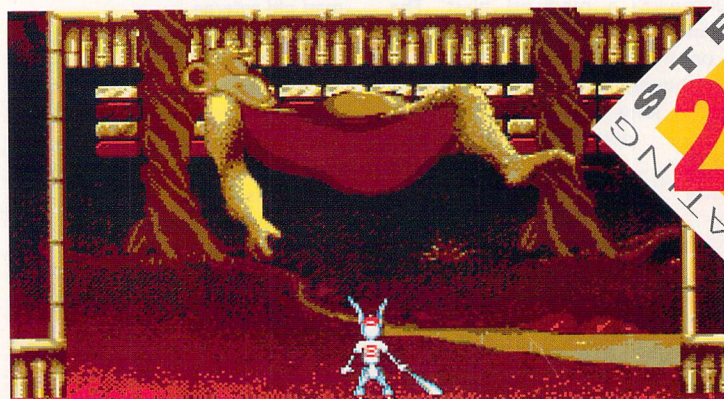
■ On the moon – a big step for mankind and an even larger swing of the bat for Bunny.



ing here to get at all excited about. After you've finally managed to get used to the awkward control mechanism and knocked off a couple of levels, your face soon starts to sag down towards your belly as you realise that's all the game has to offer. This could be a good game to get out when those hated relatives come round, but do you really want to spend £25.99 on it? The only really amusing bit in the game is when you see Bong creep towards Boubou on the final level and bite her head off, but then by this stage you're so fed up that Sid Little begins to look like a comic genius.

Verdict

Sad to say, but *Bunny Bricks* is pure, unadulterated crap. There's nothing here to capture your imagination, the control mechanism is awkward and the backgrounds are nothing to shout down a rabbit-hole about. You're going to have to be pretty desperately bored to want to play *Bunny Bricks*. You just can't help wondering why programmers bother to develop games like this when we're still waiting for the sequel to *Monkey Island*. Avoid.



■ King Kong has finally and with great relief retired to the jungle and now spends his days dreaming of skyscrapers and rabbit stew.

RABBIT RABBIT

While *Bunny Bricks* is certain not to go down in history as one of the great rabbits of history, here are a few things that have

1. Bunny girls: famous for tottering around in high-heels and leotards with pom-poms stuck to their backsides.
2. Bugs Bunny: the world's number one carrot-cruncher. Bunny doesn't stand a chance.
3. Thumper: Bambi's best buddy and a classic rabbit from Disney.
4. Roger Rabbit: doing battle with Doctor Doom in *Cartoon Town*.
5. *Watership Down*: blood-thirsty animated feature for the kiddies.

6. Chas and Dave: You've got more rabbit than Sainsbury's... The Shamen of pub rock with better lyrics.
7. Miximatois/vivisection: the means to bring the scientific population under control and perform experiments upon them.
8. Hartley hare: "There's Pig.. and Hartley! There's Topov... and Hartley!" Egomaniacal puppet from *Pipkins*.
9. Anyone called Warren.
10. Bunny in *Eldorado*: fat, balding, moustachioed git with the acting ability of a bucket of lettuce.

BY ROB MEAD



■ "Do you mind if I 'ave a whisper in your shell-like?" "Watch out, you'll take me 'ead off!"

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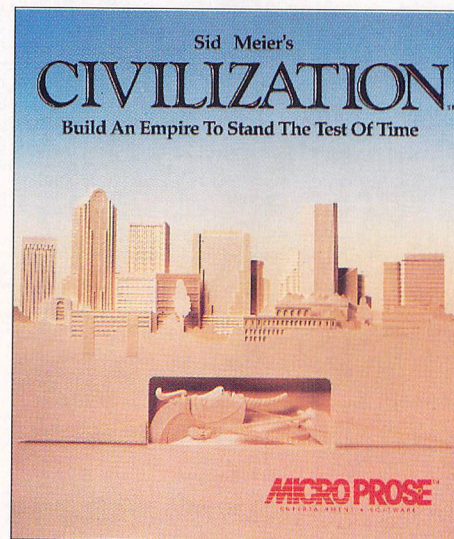


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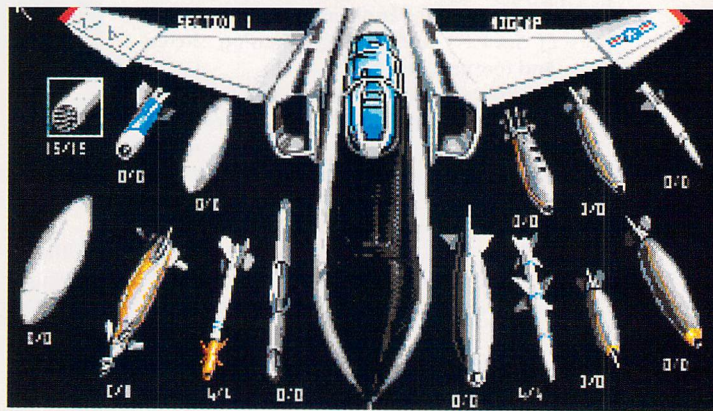
FLIGHT OF THE INTRUDER



SOFTWARE HOUSE:
DIGITAL
INTEGRATION/
ACTION SIXTEEN
PRICE: £14.99

Now released on the budget Action Sixteen label, *Flight of the Intruder* won an ST FORMAT Gold rating when it was originally reviewed back in STF 29.

Based on an aircraft carrier in Vietnam during 1972, your job is to take command of either an F4 Phantom or an A6 Intruder and complete various missions to achieve your command's objectives. Because this is a flight sim, rather than a game, the controls are extremely complicated and at times you feel as if you need to grow an extra pair of hands to cope with all the keyboard commands, icons and pull-down menus. It certainly makes you realise how complicated it is to fly an aircraft. Luckily, there's a 216 page manual to wade through which tells you all about the plane,



■ The awesome amount of weaponry on this F4 Phantom should be more than enough to scare away even the toughest MiG pilot.

your missions and the background to the Vietnam conflict.

The missions have varying levels of difficulty – with titles like Iron Rain and Hunter Killer – and the program enables you to swap between Phantom and Intruder aircraft so you can always be where the action is. Unfortunately,

because you have to follow the US Command's Rules of Engagement, all your missions take place under severe operating restrictions, so you can't take pot shots at stationary vehicles or attack undesignated targets without the risk of being court-martialled. Once you've successfully completed

an operation, your next headache is going to be putting the aircraft back on the carrier. However, there is an autopilot function included so that you can get some much needed help when you first start trying this manoeuvre.

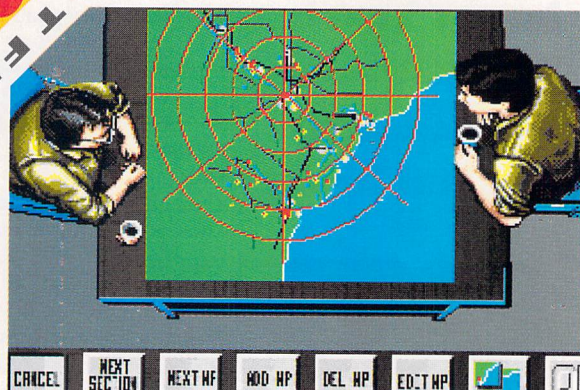
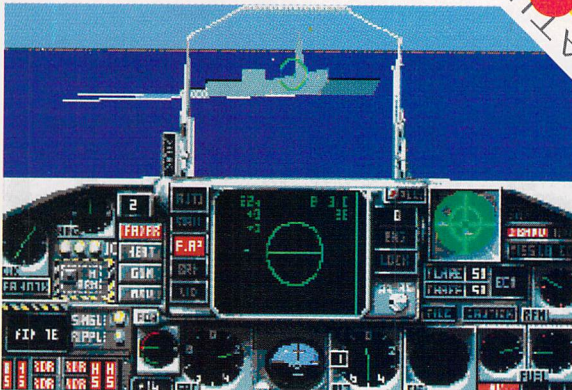
Once you've mastered the complicated controls, the gameplay is slick and you're soon shooting around the skies like an angel with 20 MiGs on your tail. The graphics are reasonable, but can look a bit blocky with the 3D perspective sometimes getting a little confused.

Verdict

An immensely complicated, but very realistic flight sim which puts you firmly in the pilot's seat. It's only real rival is MicroProse's utterly brilliant *F19 Stealth Fighter*, but at a mere £14.99, *Flight of the Intruder* makes an ideal introduction to this genre.

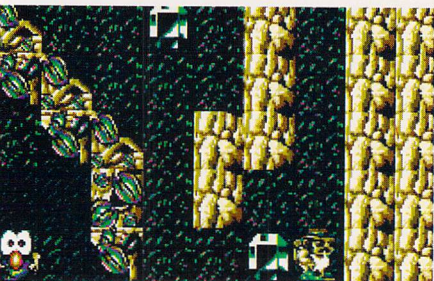
BY **ROB MEAD**

■ Any second now this ship is going to be blasted to oblivion by the Intruder's unfeasibly large arsenal.



■ This is the map showing you the waypoints for your mission and your prospective targets.

AROUND THE WORLD



■ Can Phineas make it to the exit before he dies of boredom? It's going to be close... oh no, look out, Wayne's closing in.

SOFTWARE HOUSE:
FLOPPY SHOP
PRICE: £9.95

Floppy Shop have got together with the Pixel Shop – more famous for their budget releases under the name of the Happening Boiz – to release this, which is their first commercially available arcade adventure. And it's pathetic. Really, it is.

You play a blobby chap called Phineas who has to trawl around 40 levels looking for diamonds and other things to collect while avoiding rock-falls, toxic waste and your best mate Wayne who kills you on contact. The problem with this game

is, well, everything really. The plot's hardly original, the control method is jerky and unresponsive and you can see better graphics on a hole-in-the-wall cash machine.

Why don't you give this another go, eh, lads?

Verdict

This is a totally disappointing and dull game which is about as addictive as getting buried in a drawerful of smelly socks.

BY **ROB MEAD**



■ Being underwater has never been such fun. If you're lucky you could get an aqualung.

As Dylan Thomas put it – football. A game played by gentlemen with odd-shaped studs. Or was it a game played by studs with 44 balls? No, a ball shaped by 22.. Anyway, James Leach investigates four slightly related items

LIVERPOOL**FROM: GRANDSLAM****PRICE: £24.99**

Liverpool. The word itself conjures up visions of a city in the north of England by a big river with lots of Scousers and vaguely amusing sitcom-folk. And football, too.

In this game you control the players as they move around the pitch after the errant ball. The sprites are bigger than most games of this sort, but there's a price to pay; the game isn't quite as fast as it should be.

Control is a problem, too. Keeping possession is fine until you try and neatly wrong-foot an opponent, whereupon the ball is delivered to him on a plate, and he rushes off. Of course,

DR FOX'S 1992 FOOTBALL ANNUAL**FROM: DR FOX****PRICE: £7.99**

Dr Fox? Wasn't he the guy who could talk to the animals? Didn't he go round the world in 80 days? Or maybe he invented a time machine?

No. Dr Fox is the proud author of this program which enables you to analyse the performance of any or all of the league football teams. Why? To win a fortune on the pools, obviously.

Someone has typed in a vast amount of data which can be called onto the screen in any form you wish. For example, if you want to see how Bristol Rovers stood in the First Division on any given date, you can call up the correct table. How many away goals they scored? No problem:

LEEDS UNITED CHAMPIONS!**FROM: CDS****PRICE: £24.99**

Now here's a management game with a difference; you can only manage Leeds United. Fine if you're a fan of them, then, but what about Bristol Rovers, eh? They're in dire need of a manager at the moment.

Anyway, consider, if you will, a Leeds United languishing at the bottom of the league. They

■ The powerhouse of Leeds United Champions! The nerve-centre, the nub, the core of the operation. The main menu, in fact.

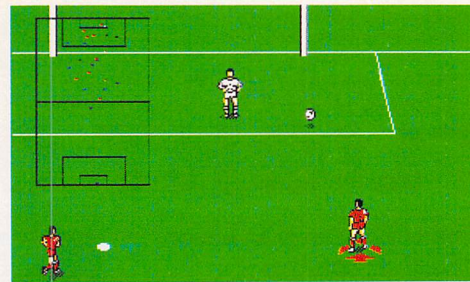


■ Striker Manager, the game which gives you the chance to decide when your men should kick the ball, and roughly in which direction.

STRIKER MANAGER**FROM: D&H GAMES****PRICE: £24.99**

Not only do you get to play football here, but you also get to manage your team. Perfect if you enjoy snatching the glory from others on pain of being sacked. The idea is to set up your side so it can't possibly lose, then go in and score all the goals yourself.

Most of the usual management options are here; you can buy and sell players, train them, swap them, set up your positions – anything you like, really. Then when you're happy (or bored with



■ The goal attempt is crap, with an emphasis on the gutteral, rolling "r" as in Brookside.

practising makes this less of a hassle, but it still doesn't feel quite right.

Each player's name pops up when they are on the ball, so at least you feel that Liverpool are playing, rather than just any other team who have chosen to wear red that afternoon. The

simply click on the right menu. All the matches played by all the teams, down to the Diadora Football League or even the Beazer Homes or HFS Loans League are here.

So it's a powerful database. What you can also do is harness it using the Analyse option. This gives a statistical rundown of any team. Fixtures which have yet to be played can have their results predicted relative to past form.

You might be a doubting Thomas who believes that this system can't possibly work. Fair enough – the irrepressible Dr has thought of that, too. His program even enables you to compare results (which you have to input) with the forecasts it made, so you can see whether it's actually any good.

desire, as should you, to be at the top (where in reality they are, give or take a place or two). It's up to you to get them there.

Your first move is to make sure Gordon Strachan never, ever gets injured. Once he goes down it's time to wave hello to the Toby Gibbonposture Sunday Morning Crap League. Once you've managed to stave off that fright, it's time to train the men then sit back with a glass of hot toddy to watch the match.

Ah. Bit of a problem here because for the duration of the match, you tend to see a rather uninspiring picture of the tunnel at Elland Road. The attacking, defending and blatant falling-over-howling that goes on is only hinted at with a few words at the top of the screen. And even

doing all this) you can go and have a match. *Sensible Soccer* it isn't. The graphics are big and there's a lot going on, but as far as controlling a player goes, well, you're limited to clicking with the mouse when an indicator points towards the goal. This does make a difference to the run of play, but it isn't very satisfying and there isn't a vast amount of skill involved. Leaving aside the "arcade sequences" the management bits are pretty good. You use the mouse, clicking on icons and highlighting things you want done. It runs quickly and any mouse-related cock-ups you might make are easily rectified.

One apparently unique feature is the ability to get your scouts to search for people of particular skill levels. By simply typing the skill rating of the person you feel is missing from

pitch is viewed from an oblique up-the-pitch sort of angle, which is all fine and dandy until the ball goes behind one of the largish sprites in a crowded goal-mouth.

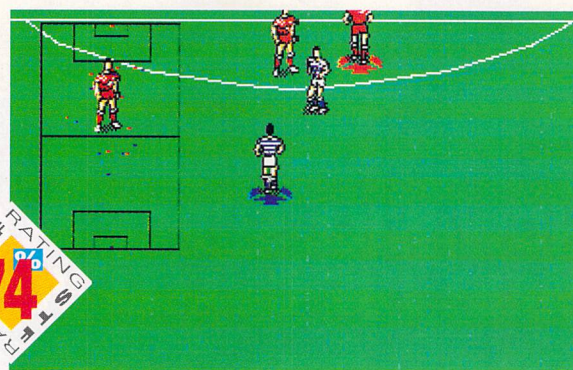
The action is pretty frenetic although it's not incredibly smooth, and the large players are interesting to look at since they do their utmost to be in the most awkward position possible, and try to thwart you at every turn.

There are plenty of on-pitch features which improve the game as well, such as red and yellow cards, headers and penalty shoot-outs, and you have the chance to play in a full season as well as go for the FA Cup. Unfortunately no European matches are included, but perhaps this would have been asking a bit much.

Verdict

Liverpool just doesn't compare with the likes of *Kick Off*, *Sensible Soccer* or *Striker*, but it's not bad and has a grip on reality, owing to the fact that you're using real players. It's tough, too. You do have to persevere with the practice matches to get a feel for the game (you could just leap in, but you get completely slaughtered for the first few games).

So it's not bad. Trouble is, if you're not especially keen on *Liverpool*, you'd be better off with any of the other football games, which do play better.

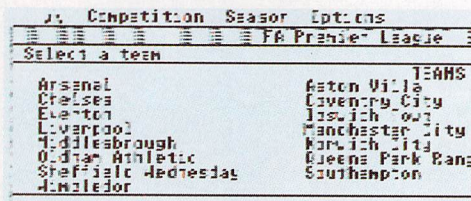


■ *Liverpool* has plenty of goalmouth action, but can it hold its own in the baths at the end of the match?

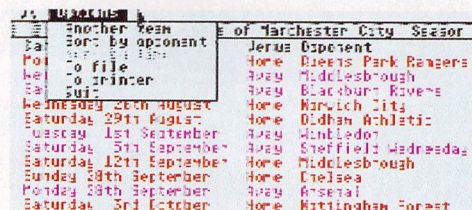
Verdict

If you get *Dr Fox's 1992 Football Annual*, you're going to have to input a fair bit of data yourself every week in order to keep it up-to-date. This has been made as easy as possible, but it's still rather a bind.

The conclusion must be that only true fans (or those who are absolutely desperate to win some dosh from Littlewoods) are likely to find it in them to tap away inputting data every Saturday evening instead of going out and drinking too much or even just getting a pizza and watching a video. If you need results, though, you can send off your disk to Dr Fox with an SAE and two first class stamps and he promises to get a modified version back to you by return of



■ Roll up roll up! Pick a fixture! *Dr Fox's 1992 Football Annual* gives you the chance to do just that. Also learn how to splint broken limbs. It's all here.



■ Last season? Who cares about last season. Let's look forward to the future. Which is yet to come, and is, in fact, still on the horizon.

post. All this on top of his 80 hour hospital week, too. The whole thing runs off the GEM interface, making it easy to use and pretty quick, too. It's not much to look at, but what it does it

does well, and the data is fun to play with. As for winning the pools... well, it can't predict any worse than a human, can it?

then the finer points of the melodramatic screaming and tumbling are glossed over. So what it comes down to is another management game which, though it's done well, has nothing new to offer. About the only thing which this game has and many others don't is the chance to nick promising players out of your Youth team. You don't get to interfere with the Youth team (good thing really, because you'd be locked up) but it pays to keep an eye of the lads because occasionally a decent player turns up, forcing you to child-nap him before he's 18 and forced to leave the minor side.

Once more, everything is icon driven and you can fiddle with the positions of your team, as well as training them and trying to control

their tempers. Temper is a rating given to each player, and must be taken into account before giving them responsibility on the pitch or letting them near night-clubs. You can also increase the stands at your ground, charge what you like for tickets and generally try and extort money from punters and foreign businessmen. Actually that was a lie.

Verdict

Leeds United Champions! suffers greatly from having an exclamation mark after its name. Apart from this, it's a sound management game with less-than-stunning on-pitch action. Mouse-controlled once again, it's as good as most, better than some and worse than a few. OK?



■ If the Elland Road tunnel could speak, what stories it could tell. "Well, I've seen loads of blokes run through me, then 90 minutes later they run back. Happens almost every other week."

your side, you can get all the available players with that skill rating listed.

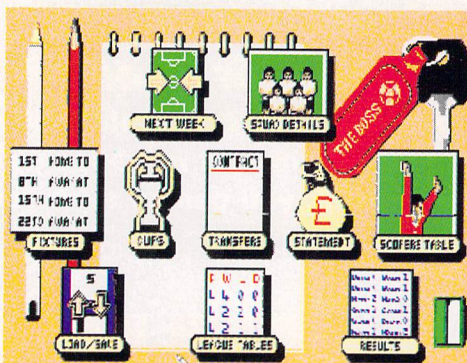
There is a disk option too, so you can save and load to your heart's content. It's a small point, but you still see management games occasionally which don't have this option.

Verdict

Striker Manager is a bit of a misnomer; you don't get an awful lot of control over your boy on the field, but for the first few matches it's worth using the option before turning it off and concentrating solely on the management side which is competent and as good as anyone else's. The only thing wrong with this game is that it's far too expensive and comes in an unnecessarily big box.



■ Well, it's a game of two halves, Brian. Brian? Where's Brian, anybody? Oh Gawd, he's locked himself in the Ladies' again!



■ The main menu. Right, I'll have a steak, chips, two midfielders and a side order of goalmouth fouls. Oh, and a penalty to follow.

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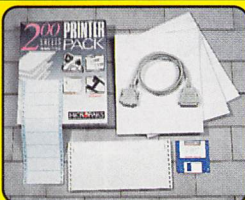
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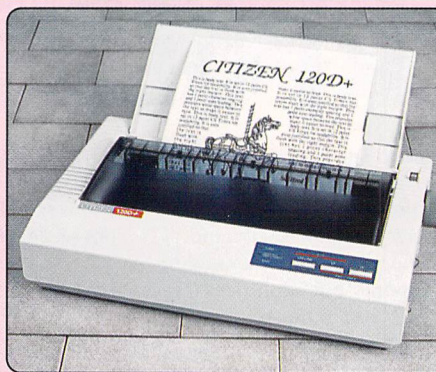
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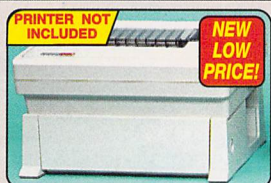
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DIZZY, PRINCE OF THE YOLKFOLK

SOFTWARE HOUSE:

CODEMASTERS

PRICE: £7.99

Reading the plot of this one is like wading through a Hans Christian Anderson story that's been rewritten by William S Burroughs and illustrated by H R Giger. To put it bluntly, Daisy, Dizzy's plutonic pal, caught herself on a mystic spinning wheel she found in a castle in the Enchanted Forest which they blundered on when

Daisy found all her cherries had been stolen by Pogie, the Fluffle. See? Utter nonsense.

Anyway, at the beginning of the game, Diz is incarcerated below ground, but soon gets free thanks to a puzzle of such blinding obviousness it makes you want to weep. After that it's mostly plain sailing. The idea's to find the cherries you originally came for, get

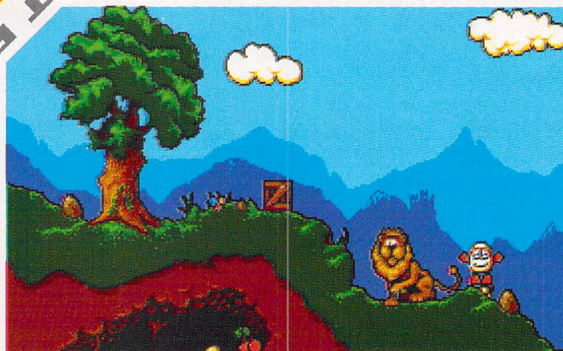
rid of Rockwart the vile troll who locked you up in the first place, and rescue Daisy from the indignities of sleeping for too long.

The same sorts of puzzles crop up as in other Dizzy games, but you need to do a lot more bounding around to get the objects to solve them in this one. The locations cover such diverse places as Heaven, a tree village, the castle and a large amount of

forest. Dizzy's particularly athletic: his jumps sometimes span half the screen. The graphics and animation here are a lot better than, say, *Spellbound Dizzy*: brighter and more complicated. In the end, though, it's all just one more Dizzy game with which to while away a couple of hours. Just you wait until Virtual Reality Dizzy appears.

BY ED RICKETTS

■ As Oscar Wilde once said, "To lose one's friends is tactless; to lose one's wand is simply careless." It's still not very funny, is it?



■ And the egg chanced upon a lion with a thorn in its paw. And the egg said to the lion, "Lion, why are you so sore troubled?" And the lion replied, "Bloody hell, a talking egg!"

SPELLBOUND DIZZY

SOFTWARE HOUSE:

CODEMASTERS

PRICE: £7.99

You'd have thought Dizzy would have had enough of all this exciting adventure by now. After all, he's made a tidy sum; surely it's about time he used his, er, nest egg to settle down in a carton of his very own. But no. Back he bounds, in these, er, re-releases, but you're probably not counting any more, anyway.

In *Spellbound Diz*, the Yolk Folk (Dizzy's albumenic friends, and yes, they are just good

friends, actually) are in trouble. Again. What a surprise. Diz went and read a spell from Theo's magic book and whisked them all off to God knows where, so now he has to follow and rescue them, by collecting the Special Rotating Stars of the Underworld.

Now what what really happens is this. Just as in other Dizzy games, it's a case of wandering around the locations, trying the obscure objects in various places to see if they work, and basi-

cally searching out the stars and objects you're going to need if you're going to rescue the Yolks. There are about 100 screens, all decorated with the simple and often sparse graphics that characterise Dizzy games. The puzzles are either ridiculously simple or desperately long, drawn-out and obtuse, so you won't be completing it for a while.

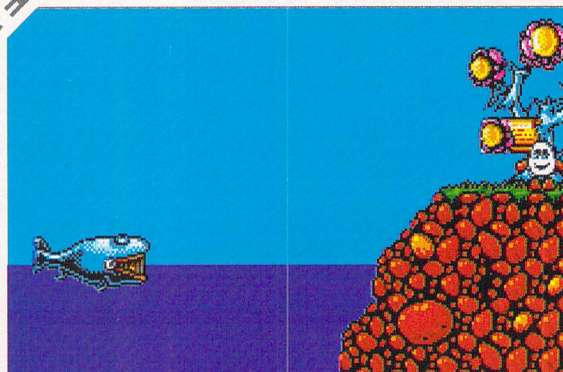
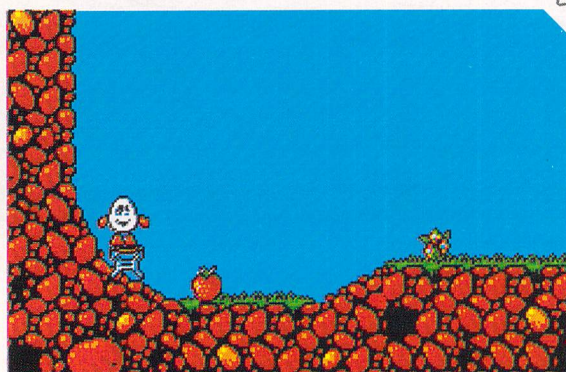
Spellbound Dizzy is pure Codemasters: cheap, cheerful, bright and fairly good value for money. Like me, really.



■ "Well, you're wrong. No, wait a minute, you're right. Or am I lying? Do you think I'm lying, Eamon? Yes or no? No, then? And you're sticking to that?" and so on and so forth.

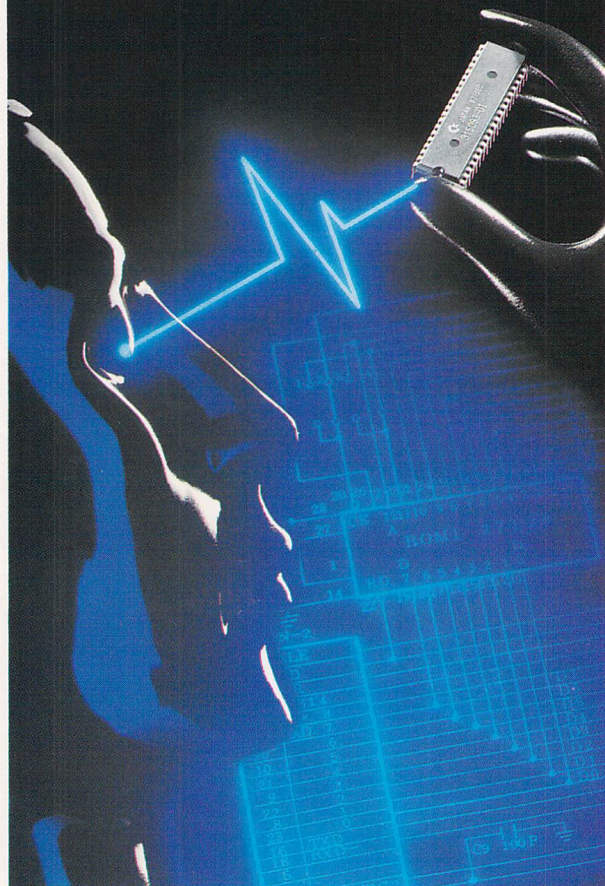
BY ED RICKETTS

■ Dizzy, Spellbound as he is, fails to take heed of the old joke involving the egg, the trampette (sort of a more feminine trampoline) and the revolving mushrooms. So, what happened next?



■ "Well, I think he gave up on the deep pit nonsense and found Willy the Whale instead." "So that's Willy the Whale?" "Yes." "And you're not going to change your mind." "NO!"

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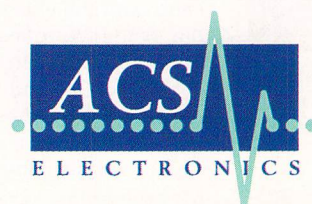
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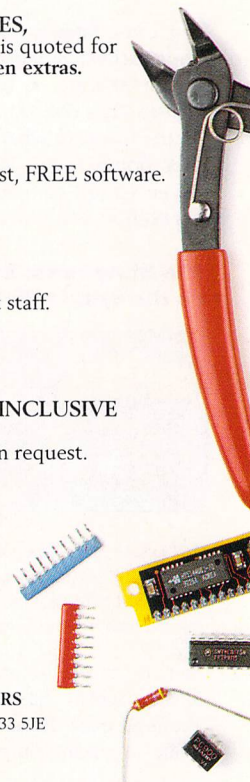
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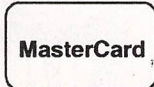
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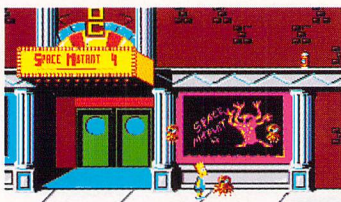
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DREAM TEAM

SOFTWARE HOUSE: OCEAN
PRICE: £25.99

You can't imagine Bart Simpson, Arnie Schwarzenegger and Hulk Hogan sharing a bathroom, let alone a little box with *Dream Team* on the front, so what on earth are they doing here? This is one of Ocean's latest compilations featuring licences you love to hate.

The Simpsons: Bart vs the Space Mutants



■ "Excuse me, young man, we're collecting purple things to destroy the world." "You're too late, dude, Prince has beaten you to it."

Bart is a pretty standard platformer which has you jumping about all over the shop – quite literally – spraying purple flowerpots

red and buying cherry bombs to throw at parrots. The aim of this is to prevent alien baddies building a machine to take over the planet.

The graphics are surprisingly good, though the aliens do tend to bounce up and down a lot – getting past them is just a matter of timing. Because you're up against a time limit and have to achieve goals on each level, gameplay can get quite frenetic, while the puzzle element prevents *Bart vs the Space Mutants* from becoming too boring.

Wrestle Mania

This is one dull beat-'em-up masquerading as a licensed wrestling game and pits you against opponents with the object of winning the World Wrestling Federation's champions belt. You get to run around the ring, throw punches, kick and even do a spot of waggling in the head-locks. Then you can watch the opponents insult each other on a pixelated

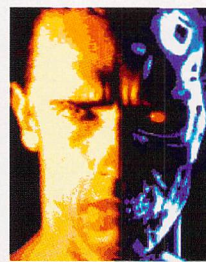
version of a TV screen. The chances are you're soon going to get bored with the same tired routines. Graphically the game's nothing special – the wrestler sprites look terrible and seem jerky, while the music is just irritating. Come back, Big Daddy, all is forgiven.



■ *Wrestle Mania*: a game all about egos, body size, facial hair and incredibly silly outfits.

Terminator 2: Judgement Day

Arnie's great in a scrap, but really lousy with women. You can just imagine him walking up to a girl in a bar, saying "Hasta la vista baby," then blowing her brains out. *Ter-*



"Mum, you'll never guess what - Billy stuck my head in the chip fryer again."

minator 2 is a loosely strung together collection of different game genres which represent key scenes in the movie. There are a couple of car chases, some beat-'em-up action and even a spot of plastic surgery. The graphics are very good, especially in the fight scenes, but it doesn't really satisfy. There's no real link between the different genres and it can get a bit repetitive – for example, Level Four is just the same as Level One, but a little bit harder to complete.

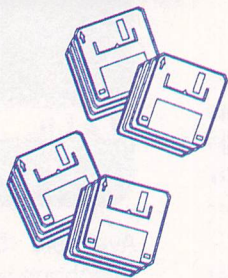
Verdict

Dream Team is a rag bag of old licences which must surely be past their sell-by date. None of the games are particularly outstanding and you can find better example of the featured genres elsewhere.

BY **ROB MEAD**

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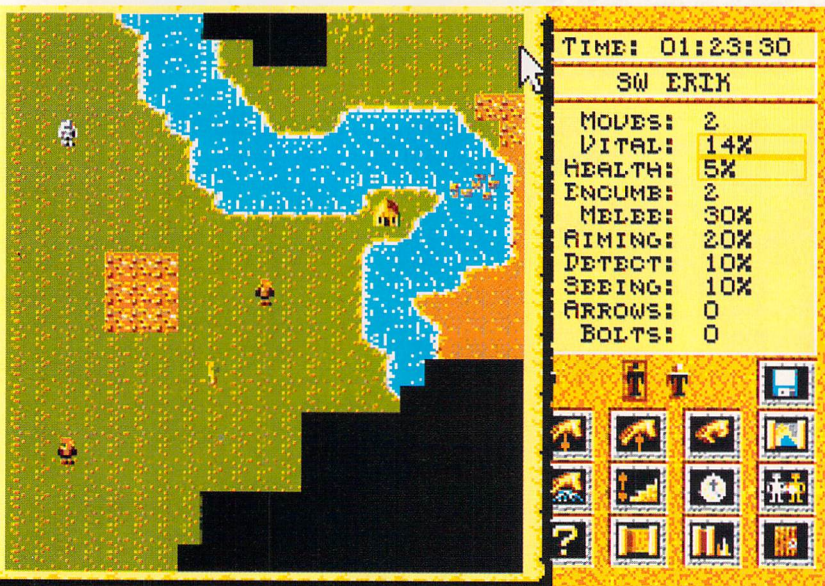
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PALADIN 2



■ The map view in *Paladin 2* is useful for planning your character moves and seeing where the enemies are.

SOFTWARE HOUSE:
IMPRESSIONS
PRICE: £29.99

Picture the scene: tiny cave at the top of a high, lonely mountain. From this cave, for the last time, exits a newly-trained paladin. Suddenly he stops and calls back to his mentor; "Master, what must I do to achieve true enlightenment?" And lo, comes the answer: "You must drink a Slim Fast shake for breakfast, one for lunch and have a proper dinner." The paladin ponders this, and eventually calls, above the rising wind, "Sod true enlighten-

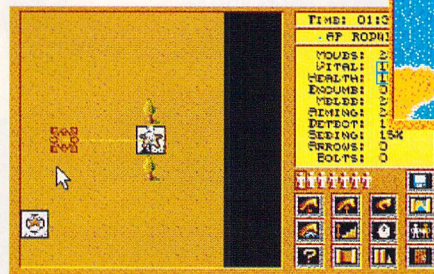
ment, I think I'll go and kill an allotted amount of enemies, rescue prisoners and destroy or capture scrolls over a series of 20 quests, all within a time limit." And he turns and leaves. There goes another one, thinks the mentor and sits down to a delicious, nutritious shake packed full of vitamins and minerals.

A paladin, as any fool knows, is a legendary hero and a knight of great renown, or so the manual says. It then goes on to say that you are not actually renowned but a freshly-trained novice who has to get to a renowned status. This is all just an excuse to go on a two

■ The paladin was kind to children, animals, Tory voters and other poor unfortunates. Didn't do him any good though, did it?



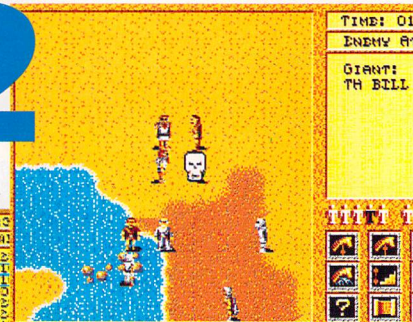
■ Oh no, it's the bad breath dragon again. "Oi, Clifford, you pong!" "And you're ugly, but I've got some Actizol at the back of the cave."



■ You get a limited number of moves per round, so swap between your characters and move them all a little at a time. That way none of your characters is going to get isolated.

disk romp through an RPG world with rivers, grasslands, castles and guardposts. Oh, and the odd enemy or 60. There are 20 quests which range in difficulty from easy through medium to hard and very hard. There are loads of enemies, such as dragons, giants, fighters and poll tax collectors, all of which are very partial to paladin flambé (especially if they are using the fireball spell) and tend to home in quite quickly, even on the easy quests. Should 20 quests not be enough, there is also a built-in editor so you can construct your own gameworld and place objects and enemies (or not) in it. There is also a quest disk with 20 more, but the price is a bit steep at £15.

Movement around the landscape is via a very jerky and unreliable click and drag sys-



■ "It's no use, doctor, every-time I try to cross the river I get an attack of the baddies. Is it fatal?" "It all depends how fast you can run."

tem which really detracts from the overall attraction. If you're a beginner at RPGs you might find it rather difficult and a bit too involved, even on the easy level. There's also no sick graphics when you die (which is all too easy) – just a skull covering your character and an alert box saying you're dead. The graphics are lovely, with every character having his own appearance. This is what the Ultima series should look like. The front end screens are in medium res, and the alert box font is so illegible that it's likely to have you inserting the wrong disk, very probably into the wrong orifice. The music is hardly anything to jot down on a postcard and return to your place of residence, just a bit of bleepy chip music while it loads. Don't argue with Impressions about it though, since they believe the game has "wonderful music and digitised sound effects." Believe us, it doesn't.

Verdict

If you really, really want to buy this game, then go ahead, it's your choice. But if you do, then for God's sake, don't look at the reviews or boxes of Heimdall, Lords of Chaos or Ultima 6. All of them have something better in terms of playability, graphics or both. If you do buy it, don't be surprised when it ends up in that dusty box full of PD demos, unless, however, you're a die hard RPG freak in which case it's likely to end up some where around the middle of your pile of games and be played once a month or so. Don't bother.

BY **JAMES O'BRIEN**

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DUNGEON MASTER DOUBLE PACK



SOFTWARE HOUSE:
PSYGNOSIS
PRICE: £29.99

When it was originally released on the now defunct Mirrorsoft label, *Dungeon Master* set the standard for all subsequent role-playing games (RPGs) to follow. Now Psygnosis have teamed it up with the sequel *Chaos Strikes Back* to give you hours and hours of mummy-bashing mania on your ST. *Dungeon Master* places your band of four

heroes in the depths of a treacherous dungeon, filled with puzzles, traps and baddies. Your aim is to get to retrieve the Firestaff and prevent Chaos from taking over your world and plunging it into darkness forever. Sounds pretty serious stuff, eh?

This game is seriously addictive and the permutations are endless. There are loads of potential team members in the Hall of Champions, where the game begins, and each one brings something different to the adventure – choose badly and you can end up as a pile of bones on the dungeon floor. *Dungeon Master* still looks great and, although games like *Legends of Valour* and *Ishar* are serious contenders for the RPG crown, this game is still one of the best.

The sequel, *Chaos Strikes Back*, is yet another magic world

for your heroes to explore and enables you to create your own adventures and do a spot of portrait painting to boot. Although it uses the same point-and-click interface as *Dungeon Master*, *Chaos* is much more complex and you need to have done extremely well in the first game to even think about trying to attempt this one.

Verdict

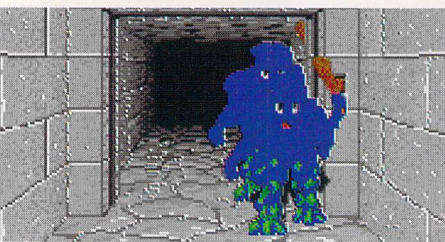
An excellent value-for-money package that should keep even



■ Fat Boy's got loads of spells, scrolls, throwing stars and water, but he's gonna waste away to nothing without some screamer slices.

the most battle-hardened RPGer ecstatically happy for months. With wonderful gameplay and extremely addictive adventures this lot can make your stress levels go up and down like a kangaroo on a pogo-stick. Brilliant.

BY **ROB MEAD**



■ Oh no! It's those loss adjusters from the jelly factory again.



■ If you've always wanted to be slimed by a *Ghostbusters* reject, well, now's your chance.

LEMMINGS DOUBLE PACK

SOFTWARE HOUSE: PSYGNOSIS
PRICE: £39.99

Presumably intended both as a Christmas money-spinner and to cash in on the frenzy of anticipation surrounding *Lemmings 2* (see Objects of Desire, page 138), Psygnosis have released this limited edition pack featuring both the original game and *Oh No! More Lemmings*.

Lemmings has rapidly become established as a classic game of the platform genre and, although *Oh No! More Lemmings* was a half-hearted attempt to recreate the

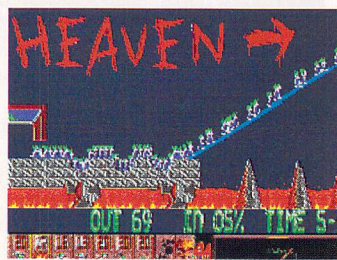
fun, frustration and excitement of the original, it thoroughly deserves its place in the top 50 games of all time (see page 16).

This double pack enables you to get your hands on both games, so you can see what all the fuss was about – you have to save the cute suicidal rodents from certain destruction by directing them around the various obstacles that stand between them and safety. In both games you get the usual lemmings characters – blockers, walkers, builders

and so on, and the only difference between the two is that the backgrounds are slightly different.

Verdict

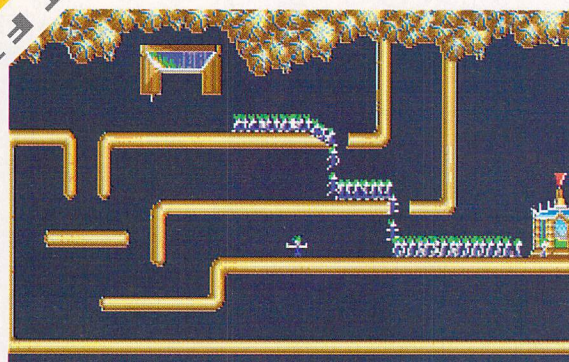
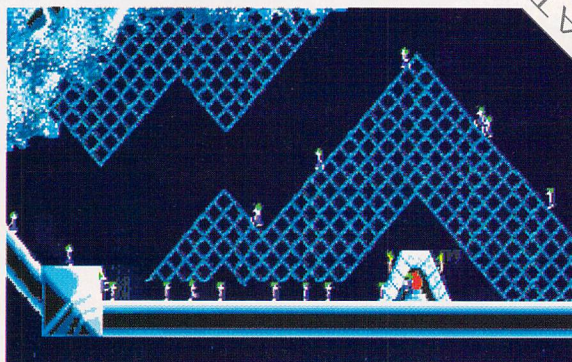
Since *Lemmings* addicts are going to have both games already, this pack must be aimed at the impulse shopper and hapless parents trying to placate their children before the release of *Lemmings 2*. At £39.99 it really is too expensive for what amounts to a shallow marketing ploy. Great games, though.



■ Heaven is a gooey custard slice round the back of the bus station, not, as you may believe, some spurious metaphysical concept.

BY **ROB MEAD**

■ "Quick, let's get outta here before they bring out the boxed set and have us doing guest slots on the Late Show."



■ "I don't think much of those bandits who did my guttering." "That's nothing, you should see the idiot who painted the outside of the house."

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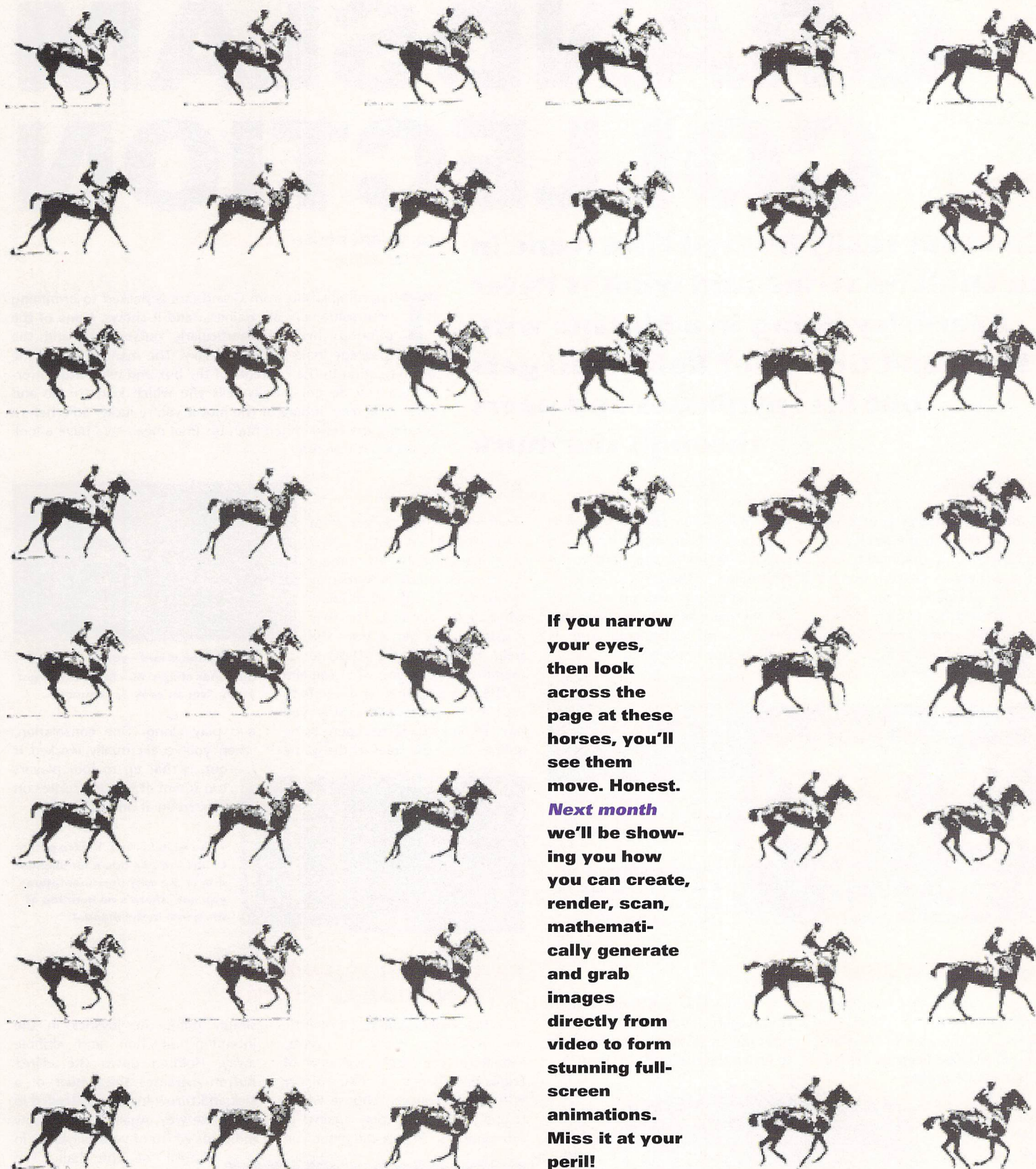
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GRANDSLAM COLLECTION

Can that really be Fred Flintstone in an England strip? And what is Peter Beardsley doing in a biplane with Saint and Greavsie? Rob Mead gets out his spyglasses and peers through the murk

SOFTWARE HOUSE: **GRANDSLAM**

PRICE: **£29.99**

This compilation from Grandslam is packed to brimming with some very old games... and it shows. None of the offerings here are particularly outstanding and the whole package looks decidedly flaky. The manual bears little or no relation to the contents of the box and what little information you do get merely tells you which keys to use and gives a sketchy outline of the plot if you're lucky. Still, before we deny the condemned man his final meal, let's have a look to see what's on offer.

ENGLAND

This footy sim enables you to get your boots dirty on the pitch playing a variety of international teams. All the action is viewed from a bird's eye perspective, the game-play is fast and the scrolling's slick. However, this game looks tremendously dated, especially in the light of offerings like *Sensible Soccer*. All

your players run around the pitch together with an arrow indicating which one you're supposed to be controlling. There's a practice penalties option, which is a cinch to get the hang of – the whole game presents little challenge and is sadly lacking in realism.



■ Time for a penalty, so send on a blubbing baby for the sympathy vote.

■ I've managed to reproduce nuclear fusion with some vegetables – the team – and some bicarb.

THE FLINTSTONES

At last, something resembling entertainment. In this game you have to paint the walls of the Flintstone home while keeping Pebbles and her manic graffiti

pen at bay. If you're not successful Wilma comes in and stops you going bowling. When you do eventually get to the alley, you have to take on your ol' pal Barney. Then, when you've done all that, it's back to sorting out the mischievous Pebbles who has suicidal tendencies. The graphics are reasonable – Fred



■ "Aw, Pebbles, how's a guy s'posed to do his DIY with you crawling around." "Bugger off, Dad. Don't you realise what a sad, misogynistic bird-brain you are?"

ESPIONAGE

Obviously a board game of some kind, but since the rather poor manual tells you nothing whatsoever about how to play the game, it's difficult to know what to say about it. The only assistance you get is from the Help button in the Detente menu which tells you what the aim of the game is, then you're left to your own devices. Obviously you have to be a top secret agent to be able to crack the rules of the game



■ The game board – you have to get the other chaps' film before they get yours. Not as easy as it sounds.

and play along. One consolation, when you've eventually worked it out, is that up to four players can squint at the tiny sprites on the screen at once. Oh dear.



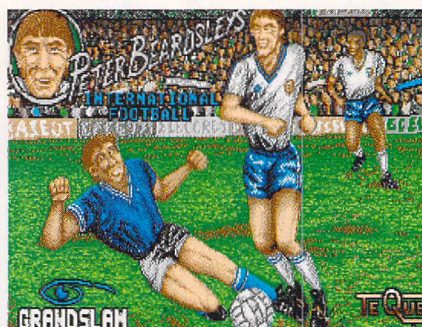
■ The Help screen. You're going to need to use this a lot because this is the only documentation you get – there's no mention of the game in the manual.

PETER BEARDSLEY'S INTERNATIONAL FOOTBALL

This time around you get a realistic spectator's eye view of events, instead of the bird's eye view of England. There's a two player option and you can choose which teams you want to play against in tournaments. To play the game you

simply point the joystick in the intended direction and dribble away. Holding down the <Fire> button increases the power of a kick and throw-ins are controlled in the same way. Again a little arrow indicates which of your players is in control of the ball. The graphics are reasonable, though the sight of all those sprites ploughing up and down the pitch can make gameplay a little confused.

■ "Peter, what happened? Why are you so badly drawn?" "It's the worry, you know. It plays havoc with your facial features." "No, it's your knees I'm talking about."



RUNNING MAN

A tedious game based on the tedious film. You get to do a lot of running, jumping, kicking baddies and being cruel to animals. As you progress through the levels there are various weapons you can pick up and there's also a puzzle element in the form of Uplink codes which can help you restore your health. The control mechanism isn't very easy to use and,

■ Why are you running, Mr Running Man? "I've bloody missed the last bus home - now get out of my way!"

instead of bursting into a sprint, you can end up pirouetting into the ground instead. The graphics are OK, but they can't divert your attention away from the fact that this game is one big zero.



SCRAMBLE SPIRITS



Hurrah! A shoot-'em-up aeroplane adventure. You have to shoot and bomb your way through six missions and eventually destroy an enemy command ship. There are a variety of targets including tanks, gun emplacements and other planes, but because you start off with five lives, pick up smart bombs and get loads of continues you can finish this game in about ten minutes. Still, it was fun while it lasted, wasn't it?

■ Flying in close formation might be a good idea for the Red Arrows, but it works less well if you're under constant attack from a nutter in a biplane.



■ Flying down the high street to get a few odds and ends used to be so easy. Then they deregulated the airlines and every idiot in a microlite tried to get in on the act.



TERRY'S BIG ADVENTURE

This is another arcade/platform adventure with you controlling Terry as he collects mushrooms, kills slugs and avoids getting his hair wet. Collect the letters which make up Terry's name to get invincibility and EXTRA for extra lives. There are sub-levels and bonus screens which all go to make this an addictive and exciting adventure in a cute Dizzyish kind of way. However, the graphics aren't up to Dizzy standard, though gameplay is slick

and the joystick controls are easy to use. The pick of the bunch in a sub-standard collection.



■ Kill the slugs to release bubbles which occasionally yield letters to make up your protective shield.



■ Terry's frankly worrying obsession with mushrooms is not matched by his fondness for water - if he lands in it he drowns.

SAINT AND GREAVSIE

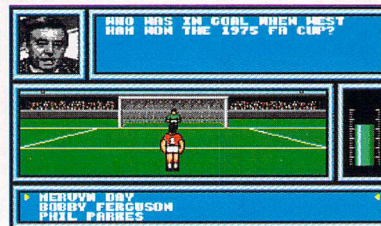
■ "Hello Greavsie" "Hello Saint." "My, you're smug git, aren't you?" "At least I'm not a smug git with a moustache my auntie'd like." "That hurt, that really hurt."

The old gits of sports TV invite you to take part in a footy trivia quiz asking questions like: "From which foot did Kevin Keegan have a corn removed in 1972?" This is utterly pointless, but the game does seem to have a certain smug charm - just look at all those wonderful digitised images of the lads themselves and revel in their gratuitous com-

mentary.

There are three difficulty levels and you get one point for a Home question, or two for an Away question - get a question right and you score a goal. If you use the one player option you're the only bod in the league and, consequently, no matter how badly you do, Saint and Greavsie commend you on your playing ability. For people who collect footy bubble gum cards of the '60s and '70s only.

■ Who was in goal when West Ham won the 1975 FA Cup? What's this - Trainspotter's Corner?



TERRAMEX

You can choose from one of six national caricatures - Henri Beaucoup, Fortiscue Smithe, Herr Kruche, Big John Caine and (ho ho) Wu Pong. The aim is to collect a series of abandoned objects and use them to create an asteroid deflector to save the planet, blah blah. Yawn. Each of the objects has a special purpose, but, luckily, you don't have to carry them yourself because a band of obliging natives with bones through their noses has been roped in to help you. As you traipse around the levels you're assaulted by a variety of flying lizards, snakes and acid rain drops. Again Grand-



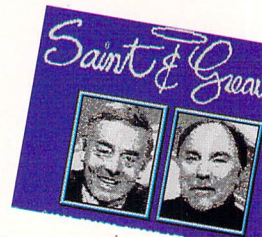
■ Watch out for those acid rain drops and the venus fly trap plant, otherwise poor Henri Beaucoup soon bites the dust.

slam's manual tells you precious little and you're left to sort it all out for yourself. This game is despicably crap - even offensive - so you find yourself hoping that the asteroid arrives as soon as possible.

VERDICT

Of all the compilations reviewed this month, this has to be the worst. The games, by and large, are terrible and there's nothing here which could capture even the most feeble imagination. The manual is useless and features instruc-

tions for games not even included in the collection, what information there is is very sketchy and you have to work out how to do things for yourself. A get-rich-quick compilation from Grandslam, then, which sticks in the throat.



BEAUJOLLY BIG BOX 2

What's big, red and is full of very interesting people doing interesting things? Rob Mead goes into his local Post Office, stands in the queue for the first day covers and practises saying the word "philately"

SOFTWARE HOUSE: **BEAUJOLLY**
PRICE: **£29.99**

Games compilations are a bit like those "Now That's What I Call Music" albums that you can pick up, in the respect that you have to sift through an awful lot of dross before you find something even remotely worthwhile that makes you want to buy the whole album, and the *Big Box 2* from Beaujolly is no exception. From shoot-'em-ups to puzzles games and arcade adventures – Beaujolly have got them all. That's all very well and good, but the real question is: are they actually any good?

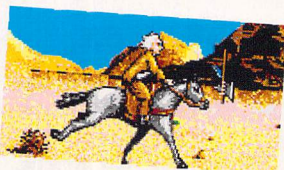
BACK TO THE FUTURE 3

■ "...And Doc Brown's coming in on the outside. But can he jump over the tomahawk before it decapitates him? The going, by the way, is good to soft in the head."

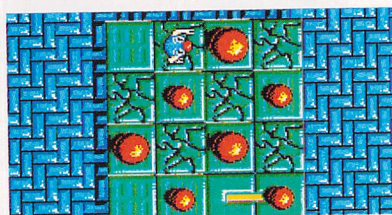
Marty McFly and Doc Brown have gone back to 1885 in this licensed version of the film. There are a number of sub-games based on scenes from the film with a duck shoot, pie-throwing contest and a spot of horse-riding after a runaway wagon. There's no real excitement in this game and you feel as if

you're just playing through a load of cobbled together afterthoughts, rather than a cohesive, well-thought out game. For example, Doc's horserace on Level One just seems to go on forever as you jump over and duck under various obstacles – this is interspersed with overhead shots of you avoiding incoming shots from cavalry and red Indians as you blunder through a canyon. To make things worse, the graphics aren't very good and the whole thing can get a bit repetitive.

■ "These darn De Loreans. I knew I should've traded it in for a Trabbie while I had the chance."



BOMBUZAL

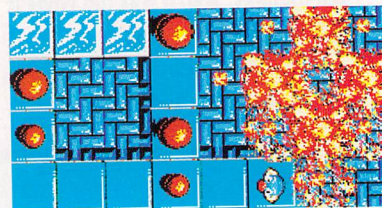


This has to be a bit of a minor classic by now. Basically, you have to charge around loads of different levels and set off the bombs in a controlled way. The puzzle element of the game is what makes it so addictive. To get to the bombs you have to walk over a series of tiles which have various properties – some tiles disappear when you

■ OK, so you've managed to blow some bombs up, but how are you going to get the rest?

■ This is the deadliest game of Chess you are ever going to play – move to the wrong square and it's curtains for sure.

walk over them, while others are icy and make you slide about dangerously. It can take quite a few attempts to suss a level out – blow up the wrong bomb and you get stranded or set off a chain reaction and get killed. There's a choice of control method – joystick is best – and you can play in 2D or 3D view.



DEFENDERS OF THE EARTH



Can you help Flash Gordon and his mates save the earth from the merciless Ming? You can? Well, first you have to rescue your children from Ming's heavily defended fortress. You guide Flash around a

■ Sing: "Flash, aah, he's the saviour of the universe... Flash, aah, you're a potato in a pair of tights." They don't write songs like that anymore... thank God.

series of levels, helped out by his pals Mandrake, Lothar, the Phantom and Zuffy. You're set upon by the usual collection of baddies and concealed weapons, and there are plenty of obstacles for you to negotiate before your energy runs out. A tricky arcade adventure which could find you throwing your ST out the window in frustration. Great fun.

ISS (INCREDIBLE SHRINKING SPHERE)

This game is a cross between a shoot-'em-up, pinball and a puzzle game. You have to guide the sphere – which is really a top secret weapon on test – around a

series of levels, avoiding baddies and collapsing squares, collecting power-ups and weapons on the way. The graphics are pretty good and the control mechanism – operated via the joystick – is straightforward and easy to use.

You need to develop a strategy to get round all the levels otherwise you tend to die rather more rapidly than you'd really like.

■ You can't beat a nice roll around the park... no rottweilers, doggy doo or traffic wardens... Oh, no! It's a killer spider.



KING OF CHICAGO



Brilliant graphics, but mind-numbingly slow gameplay characterise this tale of mob rivalry in Chicago during the 1930s. You're relegated

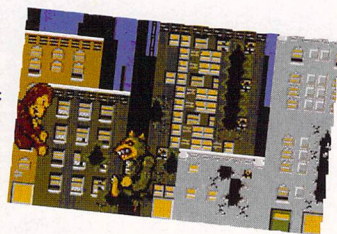
■ **Pinky and the Old Man discuss the principles of Capone's Theorem, where every hard faced question is greeted with a bullet between the eyes.**

to the position of viewer as Pinky and his cronies shoot up the opposition and chat a lot about being turfed out on your "keister." The only part you play in this cinematic program is to give an occasional click on a text bubble or to show Pinky where you'd like him to shoot someone. But, by the time he gets around to doing what you want, you're fast asleep and dreaming of the Godfather.

RAMPAGE

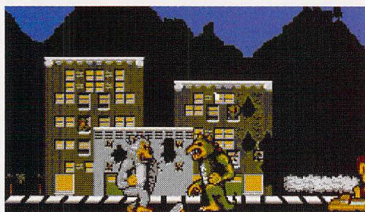
■ **Human Beings - the meat you can eat between buildings without ruining your appetite.**

Thanks to some unhealthy additives in your fast food burgers, you and up to two pals can transform yourselves into B-movie monsters - Gorilla, Lizard or Wolfman - and set about ripping tower blocks to pieces and eating their inhabitants. There are over 150 different screens of buildings for you to

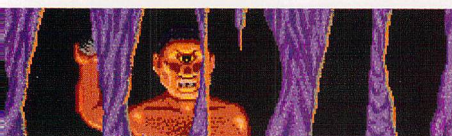


demolish. Watch out for the army helicopters and tanks, though, since they're determined to stop you eating your way across America. This game is fun as far as it goes, but one level soon begins to look like another. The graphics are OK, but the joystick control method is a bit jerky and it's not as responsive as it could be. A fun afternoon's entertainment.

■ **"Ere, Wolfman, do you eat out often?" "Come any closer and you'll find out."**



SINBAD AND THE THRONE OF THE FALCON

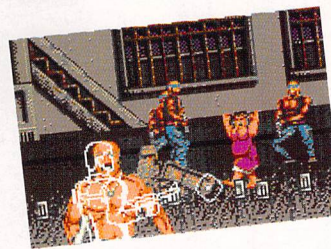
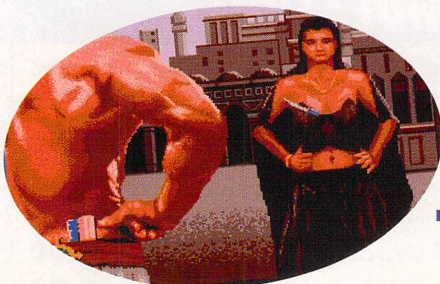


The poor old Caliph has been turned into a falcon and it's your job to break the spell, protect the Princess and battle monsters with one eyeball. It's all in a day's work

■ **"I spy with my little eye, something beginning with prawn cocktail... and ending with coffee and mints."**

for Sinbad. Like the King of Chicago, Sinbad has great graphics but is curiously uninvolved. OK, so you get to sling a few stones and arrows around and sail on rock-infested waters, but it just doesn't capture your imagination. The game is controlled by simple joystick commands and it's fairly easy to get around. However, there's a lot of disk-accessing and gameplay can be tediously slow. This turkey is all style and no substance.

■ **"Hey, is that a scimitar tucked into your snake belt, or are you just pleased to see me?"**



PREDATOR 2

■ **"Could I int'rest you in some small fluffy kittens?" "Outta my way! Can't you see there's a drug war going on?"**

subways and slaughter houses of Los Angeles. The game uses a simple point-and-click interface and there is plenty of weapons, ammo and energy for you to pick up. The graphics are good and this game is quite addictive, but it's nothing out of the ordinary.

It's 1997 and you're a hard-bitten cop with a tough assignment. Your objective is to track down a particularly blood-thirsty alien - the Predator - bumping off as many drug-dealing hoodlums as you can in the process.

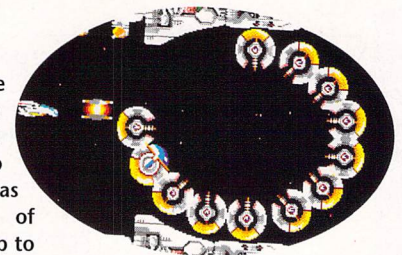
This is a reasonably good shoot-'em-up with four increasingly difficult levels set in the

■ **"I say, you chappies in the van, do you think you could stop shooting at me for one second"**



R-TYPE

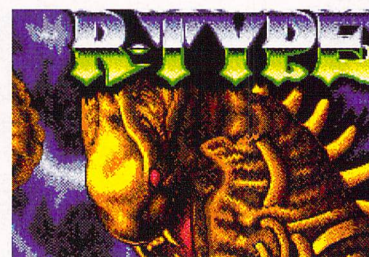
A fast, exciting version of the old coin-op classic. You've been placed in charge of a special space fighter and it's your job to blow away as many aliens as possible. There are plenty of groovy weapons you can pick up to help you and by holding down the <Fire> button for a time, you can unleash extra powerful laser bolts



■ **"Er, excuse me please, or else I'm going to have to blast you to bits..."**

on those hard-to-get baddies. A real stormer of a game which keeps your finger trigger happy for hours.

■ **This picture does not do the game R-Type any justice whatsoever. It does not show that it's a classic shoot-'em-up not unlike Defender, nor that it's totally addictive, nor that you are likely to suffer severe sprain of the joystick trigger finger. Oh well.**



TV SPORTS SPECIAL

This American Football sim gives you a TV viewpoint of proceedings which enables you to get in there and play when it really counts. Most of the action is controlled by your ST to a pre-set strategy, but you can take over at any point to control aspects of play. All move-

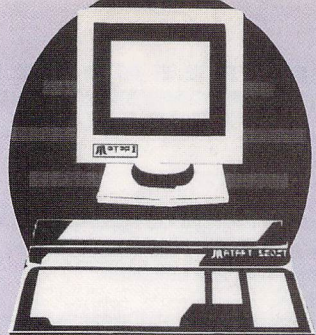
ment is controlled by simple joystick commands and the game has some impressive graphics. It's less good at holding your attention, though, and you need a lot of practice to stand a chance of producing a winning team. Great fun if you're a Grid Iron enthusiast.

VERDICT

So there you have it - a couple of stormers, three or four goodies and a brace of turkeys. Just like *Now That's What I Call Music* really, though that obviously depends what your musical tastes are. *Beaujolly Big Box 2* is a cut

above the average compilation and is great value for money. But if you have most of the good games on this already, it's probably not worth shelling out for, unless you're really very bored during the Christmas holidays.

61
ESTIMATING
RATING



HCS

Memory

MEMORY UPGRADES

HCS STE and MEGA STE UPGRADES

HCS STE memory upgrade kits come complete with full instructions designed for the novice. The complete job should take no longer than 15 minutes. 2 and 4 megabyte kits come with free utilities disk and multitasking software.

Upgrade from 520 to 1040£13.99
To 2 Megabytes£44.99
To 4 Megabytes£84.99

STF (M) and Mega ST upgrade kits

Xtraram Deluxe plug in upgrading system fits inside the computer. It can upgrade your computer in stages to 1Mb, 2.5Mb* and 4Mb. The kit comes with comprehensive instructions designed for novices. The kit uses SIMMS, so is easily upgradeable.

MARPET XTRARAM *Deluxe* QUALITY SIMM UPGRADING SYSTEM (formerly frontier)

Upgrade from 520 to 1040£44.99
To 2.5 Megabytes.....£79.99
To 4 Megabytes.....£119.99

Solder in Kit

The solder in kit will upgrade the 520ST to 1Mb. Electronics experience is required as much soldering is needed. Check your RAM chip configuration before ordering: 4 or 16 chips, SMD or DIL packages. 16 chip DIL version comes C/W sockets

Solder in kit (all versions)£25.00

REPLACEMENTS

The HCS power supply and disk drive upgrades come complete with fitting instructions and plug straight into the ST without soldering. The Power supply produces less heat than the original so is more reliable.

Replacement power supply£39.95
Double sided disk drive kit£47.00

ACCELERATORS

The AD speed made by ICD fits in place of your microprocessor. It uses a 68000 chip running at a switch able 16Mhz with cache or standard 8Mhz to give virtually 100% compatibility. The 68030 SST for the Mega ST gives phenomenal speed with a 68030 running at 50Mhz! The SST has space for 8Mb on board RAM, TOS2 included.

AD Speed ST.....£145.00
AD Speed STE£165.00
68030 SST - 50£550.00
Fitting for above£35.00



INTERFACES

The "AdSCSI" ICD host adapter gives SCSI output from the ST's DMA port, complete with software and full documentation, DMA cable and hard drive formatting software. Multirez allows the ST to display all 3 ST resolutions on the multisync monitor. The forget me clock sets your STs time and date, with cartridge-through port.

Keyboard interface allows the use of external PC compatible keyboards on the ST.

AD SCSI.....£69.99
AD SCSI Plus (with clock)£79.99
Keyboard Interface£55.00
Multirez£44.99
Forget Me Clock.....£16.99

MONITORS

14" super high resolution 0.28mm dot pitch monitor is compatible with the TT, PC, Falcon and Multirez. The new HCS MM140 Monochrome monitor has tilt/swivel base and 14" tube. Fully compatible with all monochrome ST software.

Multisync colour monitor£280.00
MM140 14" FST Monochrome£115.00

PC EMULATORS

The Vortex 386 emulator runs at 16Mhz and allows true multitasking in PC mode on the ST. Space on board is provided for a 387 CO Processor and 512K of FASTRAM. Norton factor 1.5!

VORTEX 386 SX-16£220.00
387 CO-PROCESSOR£90.00
FASTRAM CACHE£30.00

Upgrade Specialists

Marpet No 1 distributor, Exclusive Best Data UK distributor, Exclusive Joppa Software UK distributor, Gadgets UK distributor.

SPECTRE GCR MAC EMULATOR

Spectre GCR cartridge gives 20% more speed and 30% bigger screen area on the standard ST. Compatible with the TT.

NEW STOCKS AVAILABLE

SPECTRE GCR (Inc. 128K Roms)£300.00

Atari TT2£950.00

PROTAR HARD DRIVES

Progate II 40£288.00
Progate II 40DC£349.99
Progate II 50DC£369.00
Progate II 120DC£469.00



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For mail order please send description of goods and cheque/PO to:



HCS

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Prices include VAT and P & P
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E & OE

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 MEMORY**

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 MONEY BACK
 GUARANTEE**

MODEMS

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Smart One™ Fax with ST FAX software..£139.99
Smart One™ Fax with only PC software £119.99
Straight Fax software.....£45.00
Smart One™ 2400£59.99
**Smart One™ 14,400 FAX MNP V32, V32 bis
 V42, V42 bis etc£249.99**

FAULTY ST????

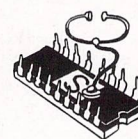


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WELCOME TO THE VIDEODROME

VIDEOMASTER

MACHINE: ALL STs, ALL STEs, TT AND FALCON IN ST LOW RES, 1MBYTE MINIMUM RAM REQUIRED

PRICE: £69.95

FROM: MICRODEAL

CONTACT: ☎ 0726 68020

At last there is a simple to use, multi-media application that can be used with a standard ST or STE, and it doesn't cost the earth. The chaps at 2-Bit Systems have been working late into the night to bring you the complete Desktop Video editing kit.

This amazing piece of kit can grab pictures from a video source at up to 25 frames per second from a live or recorded video source, albeit in quarter screen size chunks. Not only does it grab the video, you can actually grab the soundtrack at the same time! This means that the



Copyright Act is likely to be broken left, right and centre as people start making demos nicked from TV, videotapes and laser disks.

You're not going to be surprised to find out that the *Videomaster* comes in the now standard L-shaped cartridge so beloved of 2-Bit Systems, as used for previous 2-Bit samplers such as Stereo Replay and Replay 16. The cartridge is very heavy compared to earlier devices and if you look inside you can see a packed circuit board with no room spare for even one more chip. Input for both video and audio is by means of standard phono sockets, with two controls to adjust the

contrast and darkness (or brightness, to the rest of us) levels. Apart from the leads connecting to the video source, that's all there is to the hardware side of *Videomaster*. See the Connections box below.

Use a VCR as a video source or, if you have a satellite dish or cable TV, you can grab directly from any channel which you can record on your VCR – simply turn your VCR to the appropriate channel that you normally use to record satellite programs. Alternatively you could digitise games from another computer as long as you use the composite video output of the machine you wish to make grabs from. *Videomaster* can make grabs from any composite video source.

There are two versions of the digitising and editing program on the *Videomaster* disk, one for the ST and TT and a slightly different version for the Falcon. The main difference with the Falcon version of the program is in the full screen section. Instead of a selection of options to create *Spectrum 512* pictures from separate red, green and blue grabs, the Falcon ver-

sion has a true colour merge option. The rest of the program is identical to the ST version.

The program runs in ST low resolution only (320 x 200) on all machines including the Falcon, so you need a colour TV or monitor. When you run the program you are presented with the video card, this consists of a quarter-screen size video window on the top left, a sample window along the bottom of the screen and a bank of controls on the

The video card

This screen controls the grabbing of pictures into *Videomaster*, both full screen still grabs or quarter-screen video. Most of the functions are obvious; under the main video window are a couple of buttons marked Rec Film and Play Film, these controls capture and play back sound and vision together. The bar at the top right that is marked Size displays the amount of RAM used by the clip in memory, and acts as a guide for saving purposes.

The two buttons below the size bar flip to the full screen grabbing

■ The *Videomaster* cartridge may not look very exciting but you're going to be absolutely amazed at the things it's capable of!



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menu and the setup menu. Next are a line of buttons which select the number of frames per second for both recording and playback. The next item is the frame counter, the slider in this scroll bar enables you to move back and forth through the clip in memory. Edit takes you to the editing screen and Save Pic enables you to save the frame in three formats – *Degas*, *Neochrome* and *IFF* – while the next three buttons enable you to Record, Playback or watch the video

CONNECTIONS

Connecting to a video source is easy, most VCRs have either SCART (Syndicat des Constructions D'Appareils Radio Recepteurs et Televisieurs) or phono connections as standard for audio and video input and output. If you have a SCART socket on your VCR, you need a SCART to phono lead, you can get one of these from Maplins Electronics (☎ 0702 554161) for £8.95, part number JW38R. For VCRs with phono connections, a sim-

ple twin phono to phono lead is OK for the job, Maplins have a 1.5m lead for £1.20, part number RWS0E.

Oh yes, the cartridge is simply plugged into the cartridge port (where else?) on an ST, TT or Falcon. **ST WARNING: Remember your machine must be Off when inserting or removing any cartridge, otherwise you may cause severe damage to both your ST and the cartridge.**

A FEW NIGGLES

There are just a couple of aspects of the software that could be improved, and a few extra functions added. The video editor could do with a Move Block option, a Save Block option and a Load and Insert Block option to enable previous clips to be imported into the one you are editing. You can insert single screen shots into a clip or added at the end, it can be time-consuming to save a single frame from one clip and add

it to another. An option to save and load video clips as *Deluxe Paint* animation files would also be good. Saving the quarter-screen grabs at their original size would also be useful – at the moment they are automatically expanded to full screen size which gives a blocky appearance to the saved picture. An electronic RGB splitter to enable full colour grabs from video and TV would also be a boon.

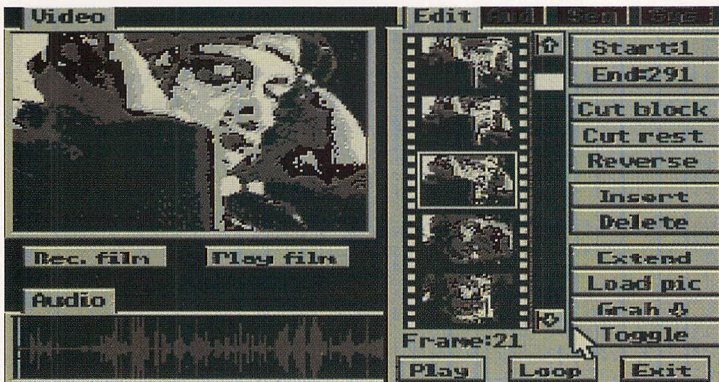
MAKING PD DEMOS

There is a PD player program supplied with the package, enabling you to play Videomaster films, video clips and sequences separately from the main software and is ideal for making PD demo disks. The program can be used either as a TTP file or a PRG file. The TTP version can be selected from the Desktop and the name of the sequence entered. The sequence is then played in a continuous loop until you press a key.

The name of an ASCII script file can also be entered in the TTP version, this then enables various effects to be used when playing the film or sequence. The PRG version can be placed in an AUTO folder along with a short ASCII script file called DEMO.CON which contains information relating to the sequence, such as effects and file path.b. Remember that demos on floppy disk can only be 800K

long unless you have a high density drive, this translates as about 80 frames of sound and video or 95 frames of video alone. Demos need not be made at the full 25 frames per second speed – very effective films can also be made at speeds as low as six frames per second – the sound compensates for the low frame rate.

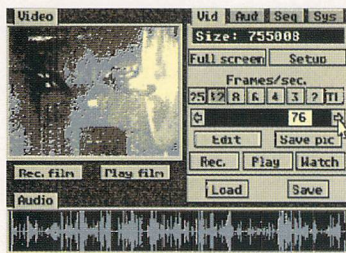
Remember, all video and TV broadcasts are covered by copyright law, so be careful out there!



source without sound. The last two buttons enable both film and video files to be loaded and saved to disk.

The video editor

This screen is accessed by clicking on Edit in the video card menu, and it's



■ If you reverse a film clip, the sound track remains unchanged, so you have to reverse it from the Audio card. You can also play back your film to see how the editing has affected the synchronisation between the sound and video.

where you can edit the clip in memory. The centre picture in the strip of film is the frame being displayed in the main video window. From here you can chop your clip about, removing unwanted frames, reversing sections and deleting blocks as you like. It is also possible to insert frames from disk in Degas, Neochrome and IFF formats at any point in the clip. Single frames can also be grabbed "off air" from the video source and inserted directly into the clip.

The audio card

This is a sound sample editor within the Videomaster program; as well as being able to edit the sound recorded from your video source you can load samples from disk to add sound effects to your film or video clip. All the normal sound sample functions are supported; reverse, clear, zoom, squash fade and volume

■ Videomaster has an almost sculpted look about its interface and looks rather attractive. The long black box at the bottom of the screen with the grey waves in is the audio window which displays the sound sample in memory.

can all be adjusted and a good range of sound sample formats are supported. Sound can be sampled at rates between 1KHz and 16KHz – obviously the higher the sample rate, the better the sound quality. However, higher sample rates take up more memory so it pays to experiment to find the right rate for your needs.

The sequencer card

Using this menu you can construct a sequence made up of various elements. Pre-defined film and video clips, still frames and sound samples can all be loaded into the sequencer and assigned to a key. You then play the keys in the order you want the clips to be displayed in the sequence which is then recorded. You can enhance sequences by looping clips or playing the same clip at different points in the sequence. In this way, a final result can appear to be many times longer than the capacity of a floppy disk.



■ Look at the options on that! The simple and easy to follow manual explains how to use all these options so that even a clinically insane reviewer like Clive Parker can manage to master it.

The final analysis

Videomaster has been designed to be simple to use so anyone can learn to use it in a few short sessions. The only other digitiser available for the ST has no audio facilities, so it cannot really be directly compared to Videomaster, it's in a field on its own. In a word, unbeatable.

BY CLIVE PARKER

BUT IT'S HUGE!

There is one drawback when you use Videomaster – the files created are huge. Think of the biggest file you can think of, double it, double it again and then multiply it by pi and you are getting close. We filled a 60MByte hard drive with files in one afternoon of ardent digitising; each file was about 3.5MBytes in length. As you can see from these figures,

you need a hard drive and as much RAM as you can get to create the demo of your dreams – 4MBytes of RAM gets filled up in no time. Don't despair though, a small file of about 80 frames with sound can fill a standard double density 720K floppy disk, so you should be able to create demos of this length with ease on a 1MByte machine.



BLACK WHERE IT BELONGS



DESKJET 550C PRINTER

MACHINE: ALL STs

PRICE: £810

FROM:

HEWLETT PACKARD

CONTACT:

☎ 0344 369369

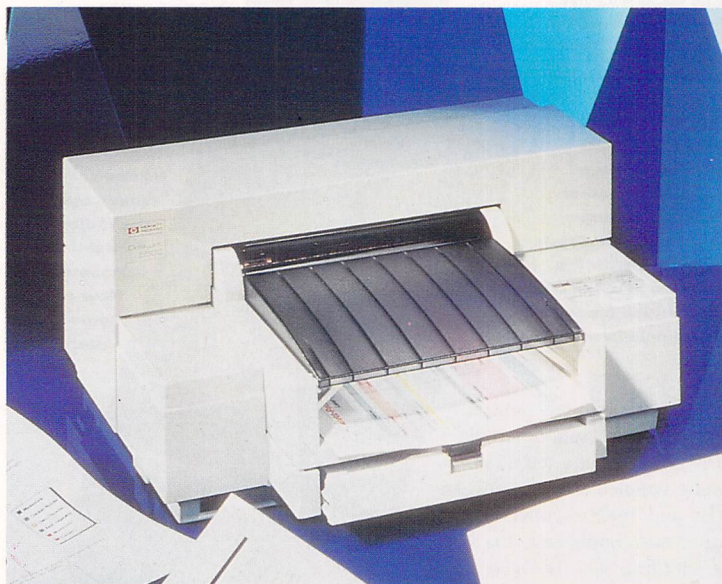
Hewlett Packard have sold over a million of their DeskJet series of print-

ers since they were launched in 1988. Highly innovative when first unveiled, the DeskJet was the first successful mass market inkjet printer, and although other manufacturers have brought out their own versions of inkjet machines, for many ST owners HP is the first choice of company, offering reliability and compatibility with most software. Deskjets were

always mono printers up until recently, using their standard black ink cartridges. Not long ago HP produced the DeskJet 500C, a DeskJet that printed in colour – and the DeskJet 550 is the next in that line.

On the face of it, it looks like that familiar stone doorstep shaped slab with the same general colour, size, finish and shape as other

Deskjets but with an improved sheet-feed tray in terms of design and operation. All the connections to the printer, that is – parallel or serial lead and power supply are out of sight underneath the back of the machine so you can push it flat against a wall if you want to. Inside it, the 550C has both a normal black ink cartridge and a special colour one next to it. The



■ Although it looks very much like a normal DeskJet, this machine has a £15 black cartridge plus a £25 three-colour one, and all in the same mechanism. So you get brighter colours, the blacks won't run, and its non-biological action is kind to your hands. This is a public service notice, not an ad.



■ She's everywhere lately, but she does show that this print took about ten minutes for the 550C to produce.

you've got
ktop Publis
se masterpi

■ The Deskjet 550C can churn out mono text just like a ordinary DeskJet if you want.

FLYING COLOURS

In the world of printing, one common standard is known as CMYK. This stands for the three primary colours (as any primary school kid can tell you) Cyan, Yellow and Magenta, and the K is the k in black. Combining these four inks, you can produce almost any colour. Where the 500C has to synthesize black by printing Cyan, Magenta and Yellow on top of each other, giving a darkish brown/black hue, the 550C can

use the real thing to produce proper solid black. For although the blue, yellow and red inks in the tri-colour printer-head can be combined to make lovely shades of virtually all colours, they rather fall down on black. So the big advantage of having a black cartridge as well as the three-colour one is that "true black" can be obtained, and the extra black printing makes the other colours appear all the more vivid.

SPEED FREAK

INSTALL IT!

Installing the ADSpeed STE is very simple once you have opened up your machine – remove the original 68000 processor chip from its socket and plug in the new board. Reassemble the machine and you're ready to run – it really is that simple. The only difficult point may come when you try and remove the original square 68-pin 68000 chip from its socket, since it is held in quite tightly. A special PLCC extraction tool is available for removing square chip packages, but you should be able to gently lever the processor out with a small watchmaker's screwdriver with little difficulty; be very careful not to damage the PLCC socket.

ICD ADSPEED STE

MACHINE: STE ONLY (STFM AND MEGA ST VERSIONS AVAILABLE)

FROM: HCS

PRICE: £165

CONTACT: ☎ 071 252 3553

The ST's main 68000 processor chugs along at a sedate clock speed of 8MHz, and for games this is fine. When you start to use more powerful applications that use GEM and complex screen updates, you probably notice that screen redraws take longer, especially in *Calamus*, *GFA Draft*, *CAD 3D2* and *DynaCADD*. Although the standard machine can process the information without problems, it would be good if it was just a tad faster. In fact, any program that uses large amounts of memory or screen graphics can benefit from a healthy speed increase. There are

many software accelerators available for the ST, notably *Turbo ST*, *QuickST*, *Warp 9* and *NVDI*, and, although these are excellent programs in their own right, you might need a bit more oomph in your machine. This is where a hardware accelerator like ADSpeed STE comes into its own.

The ADSpeed hardware accelerator provides your STE with a replacement 68000 processor running at a speed of 16MHz, twice the speed of the standard machine. When you've installed it, the board can be controlled from software, so you can

switch it between 8MHz and 16MHz. This is important because some software packages, for example *Spectrum 512* and *GFA Raytrace*, are unhappy with higher clock speeds.

Once you have installed the accelerator board and closed up your machine, boot up and check it's running properly. Simply switch on your machine and, if the screen lights up as normal, everything is OK. The disk supplied with the board has several utilities so you can control the board from the Desktop. There are a couple of utilities that can be placed in the AUTO folder, namely 8MHZ.PRG and 16MHZ.PRG, whichever one of these is active automatically sets the STE to

STF WARNING:

Opening your machine voids the guarantee if it is less than a year old. If you are worried about opening your machine, HCS offer an installation service for £20, contact them on ☎ 071 252 3553.

GAME LOADING

Most games software for the STE loads automatically when the machine is reset, so you can't adjust the processor speed from software. There is a simple way around this, the ADSpeed board can be configured to boot in 8MHz or 16MHz mode without resorting to software via a jumper on the board. A jumper

is a small connector that links two pins on a circuit board, the connector simply slides on. If the two jumper pins are connected, the STE defaults to 8MHz on booting, if they are not connected then the machine boots in 16MHz mode. These pins can also be used as the connections for an external hardware switch.

colour cartridge is a little larger than the black cartridge, and contains three colours of ink, Cyan (blue), Yellow, and Magenta (red). When the 550C springs into life, both heads sweep across the page simultaneously, printing in all four colours.

The new machine functions as a standard Deskjet 500 printer if all you want to do is print ordinary black text. Using *Protext* to print out a 60 line test page, the 550 took only 38 seconds in draft mode, and a fast 45 seconds in letter quality mode. Print



quality was very good, as we expected, and matched that produced by a mono Deskjet.

Printing in colour

At the moment, only one ST program can take advantage of the 550C printer's four colour capability, that being *HPChrome* – this was reviewed in *STF* 38, and enables you to print any colour *Degas* or *Neochrome* pic on any Deskjet printer. On the older mono machines you have to swap cartridges between each colour, and put the same page through the printer a number of times. On the DJ 500C the three primary colours are printed at once. But for the DJ 550C, Martyn has craftily re-programmed *HPChrome* to print all four colours in

■ **What a lovely load of old tut, King Tut in fact, his face has been printed in *FORMAT Gold* or a very good rendition of it using *HPChrome*.**

one go. To prevent the black ink running (bleeding) onto the colours, the software does some clever calculations and prints black to just stop short of where the colours are on the paper. The resulting pictures are the best ever from a colour Deskjet, and if you want to try out Martyn's program, a demo version can be downloaded free from *STF*'s Bulletin Board Service, get your modem to phone ☎ 0225 461330. You will like it so much that you'll be inclined to send Martyn £10 for the fully featured Shareware version and get the informative printed manual and Desk Accessory version too.

It is to be hoped that software houses write Deskjet 550C drivers for their programs soon, and this is virtually guaranteed given the present popularity of the Deskjet. The "street price" of the colour Deskjet 550C is about £550 or less, as compared to

WOW!

There isn't really any other affordable colour inkjet printer suitable for the ST market apart from HP's own 500C printer! Dot matrix colour printers are in the league below, being generally noisier and unable to produce such fine detail, and HP's Paintjet printer, which is more expensive and works at a lower resolution, isn't as good either.

about £350 or so for a standard mono Deskjet, so the extra money might be worth considering for the excellent colour capability.

BY **PETER CRUSH**

DESKJET 550C TECHIE BITS

Here are all those essential technical specifications

SIZE: The printer is 443mm wide, 206mm high by 389mm in depth, and weighs in at 6.6 kg (just over 14 pounds). The power supply unit is an external transformer supplied complete with all leads and plugs.

FONTS: There are three built in text fonts – Courier and Letter Gothic in a range of pitches, and CG Times in proportional spacing. All fonts are print-

able at either 6 or 12 points text height, and can be styled as expanded, underlined, subscript / superscript, bold and italic.

MEDIA: Paper or transparency film in the weight range 16 to 135 gsm in US Letter, US Legal and A4 sizes can be handled, and a new envelope holder is built into the lower sheetfeeder tray. The printer has a built in sheetfeeder holding up to 100 sheets.

GENERAL: The printer responds to HP PCL level 3+ commands, shared with other Deskjet models and

the HP Laserjet 2, and therefore works with software supporting these (using its black cartridge).

THE PRINTER BUFFER on the DJ550C is larger, at 80 Kbytes as compared to 48 Kbytes on the 500C and 16 Kbytes on the standard Deskjet 500.

YOU CANNOT plug in the emulation cartridges that exist for the standard Deskjet 500, thus turning them into Epson compatible printers. No problem though, since virtually all decent ST software has a proper Deskjet printer driver anyway!

the indicated speed. Setup programs such as *Superboot 7.4* (on Cover Disk 36) are useful if you have a hard drive because you can select the speed you want from the loading menu. Also supplied is a Desk Accessory and CPX module which you can use with the Atari XControl Panel) – this can alter the processor speed from the Desktop or from within applications. All the options in the utilities are obvious and easy to use. The installation manual is the usual thorough ICD job, with everything explained in detail. When it's running, all GEM actions race along and using the board with DTP and CAD packages is where it comes into its own. Almost every

function benefits from the accelerator, especially graphical redraws and text reformatting and alteration.

If you use your machine professionally and would like to increase your productivity rate, then you must have this board – it's a doddle to install, easy to use, can be disabled at will and comes at a very reasonable price. If you need even more raw processing power, a socket is provided for an optional 68881 maths coprocessor, this is available for an extra £117 with the board.

■ **This is the board that can change your entire life (if you have an STE, that is). The ICD ADSpeed STE board plugs into the processor socket on the motherboard of your STE and instantly makes your machine twice as good. Now all you need to do is double your typing speed to match. Easy life!**



BY **CLIVE PARKER**

NO STE?

If you don't have an STE, you can still have an ICD ADSpeed board fitted, although it is a slightly more complex operation depending on the layout of your machine. HCS can supply boards for the STFM and Mega ST for £145, contact them on ☎ 071 252 3553 for details of their installation service.



INFO

BUT AREN'T PCS FASTER?

There is an ST emulator, called *GEMulator*, that's available for PC contemtable machines which is, in effect, an ST on a PC plug-in card. The only problem with this (from the PC owner's point of view) is that to run the *GEMulator* almost as fast as a normal 8MHz ST, you need at least a 386SX PC machine running at 33MHz, with a minimum of 4MBytes of

RAM installed. It just goes to show the power of the 68000 range of machines compared to the 80x86 machines so beloved of propeller heads and corporate purchasers.

So, if you want to spend £1,200 on an out-dated machine, and then buy a card to emulate the ST, feel free to do so – but doesn't it make more sense to buy the original machine in the first place? The choice is yours.

Cambridge Business Software.

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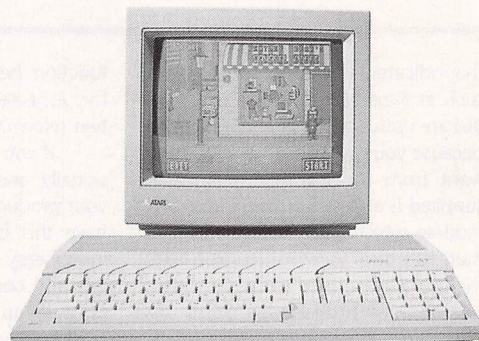


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FROM: ATARI WORKSHOP

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One of the problems with using hard drives is the fear of losing data. A slight error on the drive can cause programs, files, folders and the Desktop set-up information to disappear as if it had never existed. A sensible precaution is to backup all the data on your hard drive on a regular basis, but we know that this chore is always put off "until tomorrow." Of course, tomorrow may be too late if there is a problem with your hard drive.

It would be very useful if you could check the data on your drive to see if any errors are creeping onto it, so you can take steps to remedy the

Drive C: Structural Statistics:	
Total sectors	19801
Reserved sectors	1
Hidden sectors	1
Sides	5
Tracks	152
Sectors per track	26
Bytes per sector	512
Sectors per cluster	2
Bytes per cluster	1024
Total data clusters	9853
FAT cluster entry bits	16
FAT sectors	39
Second FAT start sector	40
Main directory sectors	16
Main directory start sector	79
First data sector	95

■ Another boring table of stats, but the info here may be of great benefit to a tall man with dark hair. Actually it's a breakdown of the structure condition of our hard drive.

problems before a major disaster occurs, and to easily repair damaged disks. To this end, ICD have produced a program that can analyse a disk and recognise different kinds of corruption, and also repair the damage if possible. This program can be used at any time and not just when you have a problem making *Cleanup ST* an excellent diagnostic tool to ensure that your hard drive remains pristine. Unfortunately, *Cleanup ST* is designed for use with hard drives that use ICD host adaptors although it does work on some others. A version should be available for the Falcon's IDE and SCSI hard drives, ICD are developing a set of advanced hard drive utilities for the Falcon.

Copy the program to your hard drive or your toolkit floppy – it is a good idea to put it in your ICD utilities folder on the drive so you can keep all your ICD stuff together. Always keep a working copy of the program on floppy disk – it is no good trying to repair a damaged hard drive by running a repair program stored on the hard drive. To run the program, just double-click on the program icon from the Desktop. A copyright message is displayed and you are then presented with a menu of six options. The program is easy to use; every time you select an option another dialog box appears with simple choices. This is hard drive maintenance made simple and the manual provides all the information needed

for you to use the program safely. Each dialog box has a highlighted Continue button to click on to carry on to the next stage, and most dialog boxes have an Exit button when you want to quit.

You can set an option to prevent the program writing to the hard drive without the program asking you first, so there is no chance of wiping stuff by mistake. The program runs through a series of tests to determine what state the drive is in. After selecting the drive to examine, select Continue to start the first test which is a check of the FATs (File Allocation Tables). The operating system uses this information to find stored files and to ensure that other data is not written over existing information.

After this initial test, directory and cluster link information is checked. This tells the program what clusters belong to what files, then the drive is checked for bad sectors. This portion of the check takes the longest and can be by-passed if you don't want to sit through it, for example, you may be just performing a weekly check to make sure that the FAT information isn't becoming garbled.

The manual explains the types of errors that can occur on a hard drive and the steps required to remedy them with the smallest possible data loss. As a final bonus,



■ This plastic disk thing, coupled with the booklet make up the almost unbearably good *Cleanup ST* program. Bung it in your ST and save your hard drive from a fate worse than reformatting.

you can back up the partition information of your hard drive. Normally when the partition information about a drive is lost, the information on the drive disappears for good and the drive has to be reformatted. *Cleanup* enables you to save this information to floppy disk and restore it at a later date should the drive fail. This is probably the most important feature of the program – and in most cases means you don't have to fully restore the drive. This does not mean that you should not backup your hard drive at regular intervals.

Cleanup is one of the easiest hard drive programs to learn to use and the functions it performs makes it a vital weapon in your armory if you have a hard drive. An essential addition to your utility collection.

BY CLIVE PARKER

SUPER MODEM

SUPRAMODEM 2400

MACHINE: ALL STs

PRICE: £79.99

FROM:

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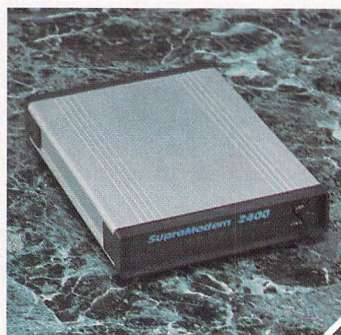
The Supra 2400 modem is the cheapest in Supra's range of modems that you can get in the UK. It is well specified, you can use it at 300, 600, 1200 and a fast 2400 bits per second, and it is simple to operate. It comes

complete with a detailed manual, an external power supply, a modem cable and a telephone cable.

On the front panel the only control is the On/Off switch, and there are eight symbols showing the

status of the modem's operation. On the rear is a power input socket, there's a mini connector on the end of a flying lead from the special mains adaptor providing an input of 9 volts AC. Also on the back panel is the modem port, a standard 25 pin RS-232C female socket, and two American phone jacks labelled Line and Phone. The Phone port is so you can plug your telephone into it, enabling normal use when the modem isn't being used, although you need a converter to plug your phone in.

Using the SupraModem is a doddle, and you don't need to understand any technicalities to get it going. Unless you need an even faster, state-of-the-art machine, the SupraModem could be the ideal cost-effective choice for your first modem, and its five year guarantee means you can rely on it. Everything you need to use it is supplied with it, so what else could you possibly ask?



■ The SupraModem 2400 is a modest looking little box, but it does the biz (and the V22bis) if you know what we mean. And we think you do. All the necessary cables and connectors are included to get you on-line, no probs.

BY PETER CRUSH

GROUND CONTROL

You can control modems with your own programs or by entering commands via the keyboard. *Vanterm* handles all the difficult stuff for you. For instance, you can set it up to store telephone numbers and Auto dial them via the modem when you want to communicate with, say, a bulletin board. A loudspeaker is situated in the SupraModem's case, so you can hear the musical electronic bleeping of the Pulse Tone dialling. Your name and password (which you have entered before you can log on to a BBS) can be assigned to

keys on the ST – handy to save your phone bill mounting up. Although *Vanterm* has an on-line help mode, it needs a beginner's guide. It doesn't take long to find your way around it, and you can also explore *Vanterm's* facilities off-line. Since it is a Shareware program, you should send a contribution to the author if you start to use it regularly. If you want to try out a friendly BBS when you get your modem, you couldn't do better than autodialling ☎ 0225 461330, STF's BBS, all it will cost you is the price of a phone call!

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ALL SEEING MOUSE

GOLDEN IMAGE OPTICAL MOUSE

MACHINE: ALL STs

PRICE: £24.99

FROM: LADBROKE COMPUTING

CONTACT: ☎ 0772 203166

Most mice are mechanical devices, and work by means of a heavy rubber-like ball turning as you move the mouse, transmitting this movement to your ST via roller-like sensors. But devices with moving parts are prone to mechanical failure; a mouse with no moving parts would have nothing to wear out and the whole thing would work better and more accurately. Well, such creatures do exist, and they are known as optical mice.

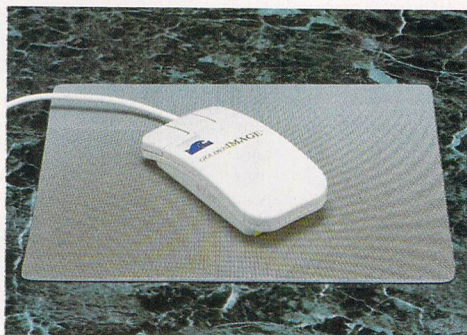
The Golden Image optical mouse looks pretty much like a normal mouse at first glance, but turning it over reveals its secret – instead of having a ball, a little lamp shines down under the mouse onto a special mat provided, and two optical sensors also situated underneath pick up any movement made from reflections off the mat. The mouse mat supplied

is treated with a black and white printed pattern resembling a miniature wire mesh, and is hard and smooth with a high gloss surface.

This mouse is a very smooth operator and you can very accurately control the on-screen pointer; it remains completely static when you stop moving the mouse, with absolutely no "creep." It claims a resolution of 250 dots per inch, and a tracking speed of 500 mm per second. Using a mouse accelerator improves the feel of this device even more. If you like having better quality peripherals, or require greater accuracy for DTP or CAD work on your ST, try this mouse for yourself.



BY PETER CRUSH



■ The Golden Image mouse is an all-seeing creature, and the poor little critter has had its ball removed.

BLIND MOUSE

GOLDEN IMAGE MOUSE

MACHINE: ALL STs

PRICE: £14.99

FROM: LADBROKE COMPUTING

CONTACT: ☎ 0772 203166

This mouse comes in a box with printed instructions and specification sheet, not that you need to know much about a mouse, other than that you should turn the computer off before plugging it in. It feels OK, with smooth contours and big buttons, and although it is a little high and not as low profile as some mice, it's sur-

prisingly comfortable to use. The resolution is 290 dpi or so, which is higher than Atari's mouse and therefore involves less movement over your mouse mat. A small mouse mat is provided which is not very practical because it tends to slide about a bit. At the end of the day this is just a good alternative mouse and one of the most economical ones available.

BY PETER CRUSH



■ The GI Mouse is a fine shiny creature, complete with a flashy logo in blue and gold. Maybe it's not the top of the range in terms of replacement mice, but it's far better than the standard Atari mouse.

IT'S SO DENSE

HIGH DENSITY DRIVE

MACHINE: MEGA STE AND TT ONLY

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PRICE: £99

CONTACT: 081 365 1151

At last there is a high density external floppy drive available for the Mega STE and TT machines, so if you have a high density disk you can make backup copies of 1.44MByte disks from drive A to to drive B in a single operation. This may not seem like a major advantage, but, like all such add-ons, the main plus point is in terms of speed – a complete disk can be duplicated in less than half the time of a single-drive system.

Of course, with an internal hard drive installed as standard in both the TT and Mega STE, there is less of a need for an external drive; files can be copied to a hard drive folder from a floppy and copied back to a second

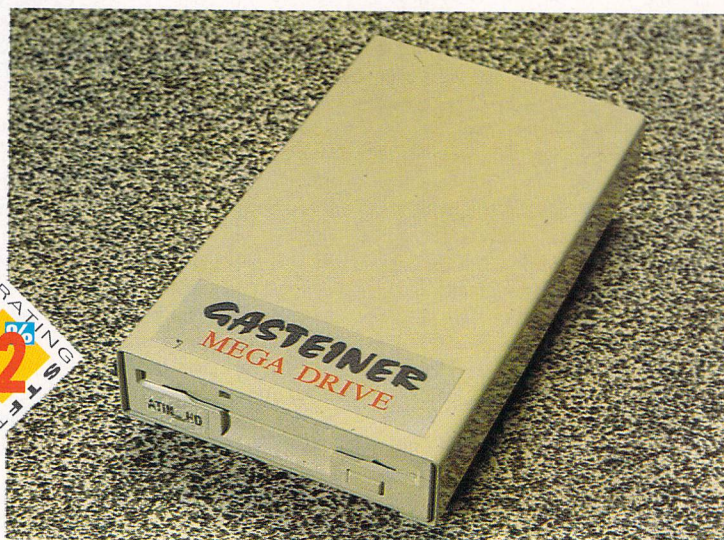
disk. The drive looks like any other hard drive – no surprise there – and has a plug-in external power supply rather than the more convenient built-in unit we would have expected at this price. High density drive mechanisms are not much more expensive than double-density drives these days, so an internal power supply could have been accommodated without too much trouble.

The drive plugs into the external floppy port and runs without any problems, formatting 720K and 1.44MByte disks from the Desktop HD formatting option, *Fastcopy Professional* and *Diamond Back 2* high density formatting options without any problems at all, and created the extended HD "fat" formats from *Fastcopy Pro*, so up to 1.6MByte capacity disks can be created. As with double-den-

sity disks, using extended formats is at your own risk. This a good quality disk drive, very useful if you have a Mega STE or TT without hard drive, quite useful if you have the machines

with a hard drive, and no use all if you have an STE or STFM.

BY CLIVE PARKER



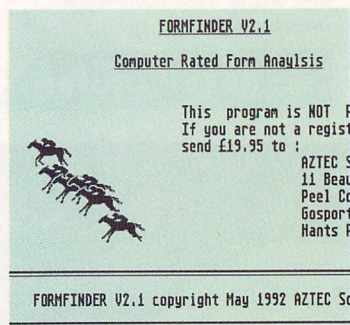
■ A high density drive for your Mega STE or TT. Other STs, keep off!



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5 PERPENDICULAR	113	9/1	14/1	>>>
3rd 9/1				
1st 20/1				
2nd 9/1				
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7 DESERT SUN	108	13/1	12/1	
8 LUCKY LINDY	106	15/1	13/2	
9 GUSSEY MARLOWE	105	16/1	16/1	
10 KARINGER BAY	104	16/1	16/1	
11 THORLIDS	94	66/1	16/1	

■ This comprehensive display tells you all you're ever going to need to know about a race prediction. You can add the actual results later for cross-reference.



■ Call up this info screen from the Danger menu and in high res you are treated to an animation of the horses running madly.

FORMFINDER V2.1

MACHINE: ALL STs WITH TOS 1.62 OR BELOW (HIGH AND MED RES)

PRICE: £19.95

FROM: AZTEC SOFTWARE

CONTACT: ☎ 0329 235249

WHAT ELSE? NOT COMPATIBLE WITH TOS 2.06

If you've ever laid a Yankee or a Heinz, this program could be for you. It's a simple, no-frills way to structure your betting on horse races. There has been a Shareware version of *Formfinder* around for some time (Goodman's PDL GD1314 £2.75), but this is its first outing on the commercial scene.

Formfinder v2.1 comes with a 16 page manual which covers how to use the program as well as details of the kinds of races which are most likely to make you some dosh. Advice is included on how to structure your betting and how to interpret the

newspaper columns listing the horse racing information. There are also files containing jockey and trainer information for all the major race courses. You have to enter the data for each race in as much detail as possible; the more data you can input the better your chances are of coming up with an eventual winner – there's no magic involved.

In action, simply select Enter New Race from the Race Info menu and respond to the on-screen prompts. You are asked which course to use, what time the race is to be run, what the date of the race is, the names of the horses and a wealth of other relevant horsey-type questions. At the end of each page you have an option to correct any mistakes you may have made. Unfortunately there is no way we can see to abort the race data entry procedure once it is started other than rebooting your ST. If you make a major error, you have

to continue entering garbage until the end of the setup routine. You can then wipe the data by selecting Clear Memory from the aptly named Danger menu.

The program relies heavily on your input. If you run it regularly and use the Update Files facility then its predictions become increasingly accurate. The screen display is less than exciting although we are led to believe that v2.2 is to include enhanced graphics.

If you know nothing at all about horse racing then you're likely to struggle at first; there are many references in the manual and program to racing jargon, so this is likely to be of most use to you if you are a seasoned punter who fancies improving the odds a little.

BY ANDY CURTIS

STILL HACKING IT

EDHAK 2.35

MACHINE: ALL STs

PRICE: \$29.95

FROM: CLEAR THINKING

CONTACT: PO BOX 715, ANN ARBOR, MI 48105, USA

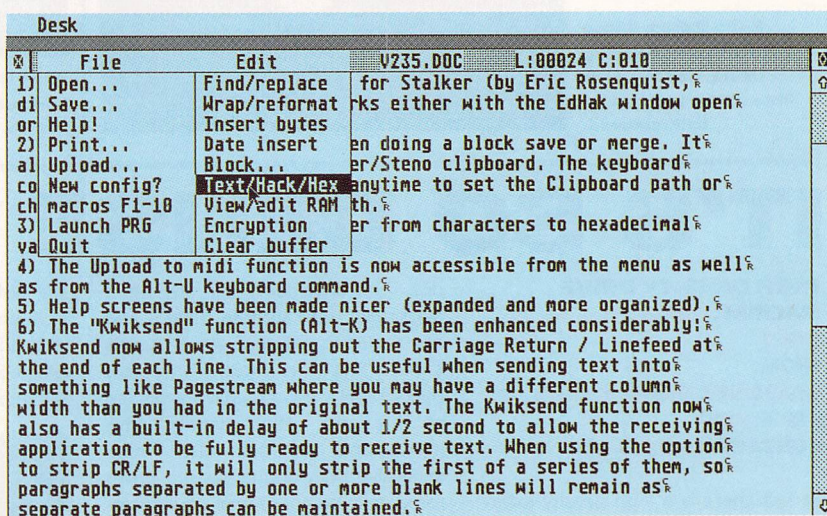
Because there are only six slots available for Desk Accessories, it makes sense to ensure that any DAs you have installed are as useful as possible. And if you only occasionally handle text – that is, if you just read on-disk text files or write short items – using a word processor is more hassle than it's worth, especially if you have to exit the program you're using first. In these circumstances, the use of a DA text editor is just the ticket, and a little application called *EdHak* could be just what you need.

This American program written by Craig Harvey was formerly distributed as Shareware, but the latest version v2.35 is now a fully commercial-only offering. You can only get it from the States at the moment, but discussions are underway to appoint a UK distributor. The latest version reviewed – v2.35 – is claimed to work with all versions of TOS including 3.06.

To use *EdHak*, you select it from the ST's drop-down Desk menu and are presented with a blank GEM-like window. *EdHak* has its own drop-

down menu, so you can access features which are also available from keyboard shortcuts. Selecting Load from the menu (or <Alternate>-<L>) enables you to select a file for editing via the usual GEM file selector or any alternative selector. The file appears in the edit window, and using a cursor controlled by mouse or keyboard, you can start to hack your text. *EdHak* is an all-purpose editor, so you can edit not only text but also data, binary files, disk sectors and RAM, and it can enter or search and replace all the 256 ST characters in hex or decimal. You can easily create letters or even longer documents, and your file can then be saved to disk, or can be printed out to your printer. Ten macros of up to 80 characters can be defined and saved in a configuration file which is automatically loaded when you boot up, so you can insert often-used blocks of text at the press of a function key. Other options can be set up in this configuration file, like margins, tab widths, line length and size of edit buffer.

If you fancy a bit of real hacking, *EdHak* comes into its own. There



■ Using *EdHak*'s window you can display any text you want, and here you can see some of the many new features included in v2.35. The display and scrolling speed is jolly fast, and you could almost get away with using *EdHak* as your regular word processor for most simple tasks. The carriage return symbols displayed can be turned off.

is probably nothing that you cannot load in and edit, though you do have to know what you're doing. You can also upload a file or text block to a modem or the serial port, you can even send messages via the MIDI port. When you switch to hacking mode, all ST characters are displayed, as opposed to text mode when just the more intelligible word processing display is used. You can use *EdHak* to

look at your floppy disks and examine the various sectors, but be careful not to change any important data! A printed booklet comes with the program, and this latest version runs much more smoothly, faster and more professionally than before.

BY PETER CRUSH

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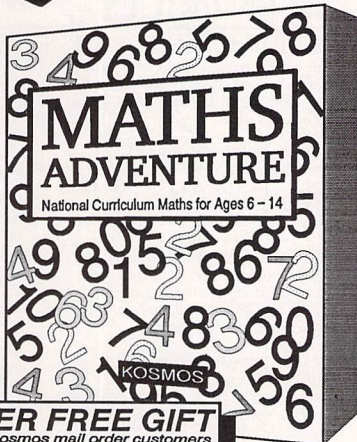
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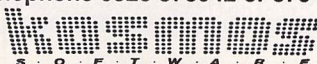
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FREEZE DRIED TERMINAL STATE 808 PDL - DISK COMM 03

The latest version of the *Freeze Dried Terminal* (FZDS) by Aaron Hopkins looks the same as its previous incarnations apart from a jazzy new colour scheme based around an attractive pastel shade of green. The transfer software can cope with the latest protocols, consisting of all three versions of X-Modem, Y-Modem, Z-Modem and F-Modem. If you have your own preferred transfer utility, you can con-

figure FZDS to run the utility from the main transfer menus. This means that any new protocols can be incorporated as they are developed, making FZDS effectively future proof. There are a clutch of other options including a text editor, macros, disk utilities and alternative fonts. After several jobs have been performed, the program won't do any more transfers. This is because the program is a Shareware demo version - but \$25 to the author secures the full version.

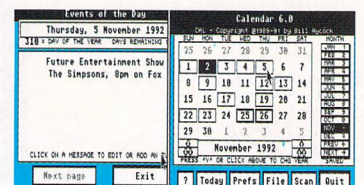


■ The latest version of Freeze Dried Terminal, probably the best PD or Shareware comms package in the world. No kidding, this program is as versatile as an egg.

CALENDAR LAPD - DISK M 108

Um, another calendar Desk Accessory, stick it in the pile! Well, no, you shouldn't do that because this Accessory is more of a desk diary than a traditional calendar program. If your system date is correctly set, then clicking on the *Calendar* option from the desk menu brings up a display of the current month, with today's date highlighted. Clicking on any day of

the month takes you to a notepad page displaying a list of events for that day, clicking on an event enables you to enter even more details. Alarms can be set to remind you of events, and different priorities can be assigned to alarm reminders so events are listed in order of importance. This utility is perfect for you if you use your ST every day. *Calendar* is both well designed and easy to use.



■ On the right is the main screen, the dates with boxes around them have messages assigned to them. Add and delete events on the left.

MINITERM STATE 808 PDL - DISK COM 11

Miniterm is one of many comms utilities on this disk, also supplied is a Mini BBS program and other comms files. *Miniterm* is unusual in that you can run it as a program or a Desk Accessory, although the advantages of having a terminal program as a Desk Accessory are not obvious on non multi-tasking systems. *Miniterm* supports V100 terminal emulation and has X-Modem, Y-Modem and Z-Modem file transfer capabilities built in. You can't set up the dial directories and macro keys from within the program, you have to load the MINITERM.INF file into a text editor to add new BBS numbers which makes maintenance cumbersome. An OK program, but it's not brilliant.



■ This is the best looking bit of *Miniterm* and that's pretty awful. Pressing <Help> displays this incredibly helpful er, help screen.



■ What a boring screenshot. The only people who are likely to get excited by this picture are wearing beanie hats with little propellers on them.

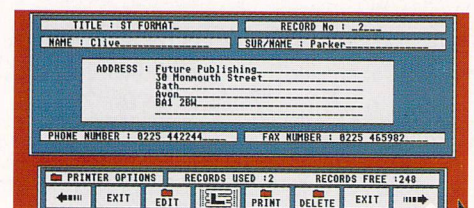
PROBE ST PAGE 6 - DISK ST 718

Not everyone can afford to get hold of a ripper cartridge to grab music and graphics from games or other programs, but then again it's only going to be programming types who want this kind of facility anyway.

Probe ST is a software ripper program that enables you to rend and tear data files on disk to your heart's content. Just load a file from disk into a buffer in memory, *Probe ST* then searches through the data looking for information that it can recognise. This means that you can only rip data from unprotected disks, game disks that use any kind of copy protection cannot be accessed, which limits the usefulness of *Probe*. Not a simple program but cleverly done.

ADDRESS BANK LAPD - DISK L17

The *Address Bank* is a handy little utility to have if you do not have a more complex program to hand such as a database, enabling up to 750 record cards to be generated, stored on disk and printed out. It is simple to use with most functions being accessed by icons along the bottom of the screen. Records can be entered, searched, deleted, edited and printed out. The program automatically centres text onto address labels if you input the label width in millimetres. There are six address fields, each one 35 characters long, so the longest addresses can be catered for. The program is written in compiled GFA Basic v2 and is rather slow. This program won't set the world on fire.



■ This is the editing screen in *Address Book*, there's nothing earth shattering here apart from the company address shown.

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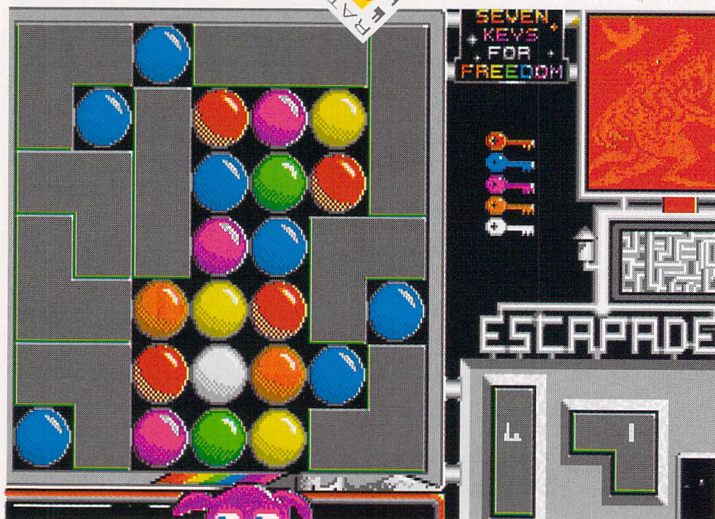
GAMES

ESCAPADE

BUDGIE - DISK BU 102

An ingenious puzzle game that's likely to rapidly drive you to distraction. All you have to do is cover all the balls with the shapes except one colour. Do this for all seven colours and you've won. It's very easy until you get to the last bit which always seems to be the wrong shape - a bit like life

really. If you rise to the challenge, you'll find the hours being eaten away until you get the knack of the thing. It doesn't quite have the long term appeal of *Tetris* but it does manage to keep you going until you've completed it once. There are some super touches, including a tiny game of *Breakout* in the corner you can play if it all gets too much.



■ The concept is simple enough, it all looks so easy. Ha, foolish one, *Escapade* is the work of the devil cunningly devised to rob mortals of time, and possibly composure as well. You have been warned.

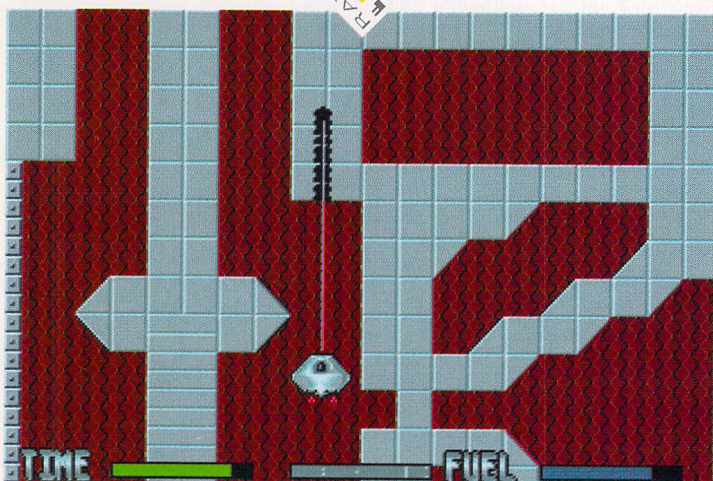
HEADLONG

BUDGIE - DISK BU 106

If smashing violently into scenery is the sort of thing that keeps you amused, *Headlong* should be right up your street. The screen scrolls horizontally at a fair lick while you wrestle with the joystick going left to right aiming for the gaps. It scrolls impressively smoothly and is also impressively frustrating until you get the

knack and stop passionately kissing the walls at high speed. Your ship can withstand being scraped along the walls but it can't cope with running straight into them.

After a few runs you learn the pattern: left, right, left, left, right and so on. A good test of your reflexes and can build quite a buzz when you hit a good run. Ultimately this is suitable for arcade masochists only.



■ *Headlong* has you doing just that, vertically compressing yourself against welcoming pieces of scenery. The gun cuts through it, but only has a narrow beam so it isn't easy to blast your way through.

LIGHT CYCLES

MERLIN PD - MPD 1124

A classic game rehased for the zillionth time. You control a little dot which travels about the screen leaving a line behind it. If you hit the edge, your own or your opponent's line then you lose. You can either play against your ST - which is not bad at the game at all, or alternatively against

another joystick-equipped human animal - and that's a whole lot more fun. It's all timing and planning, so you should have no excuses when you smash into the wall - you should have seen it coming.

Light Cycles is filled with sampled sounds and later levels also have different backgrounds you have to negotiate. Smart enough effort without shining.



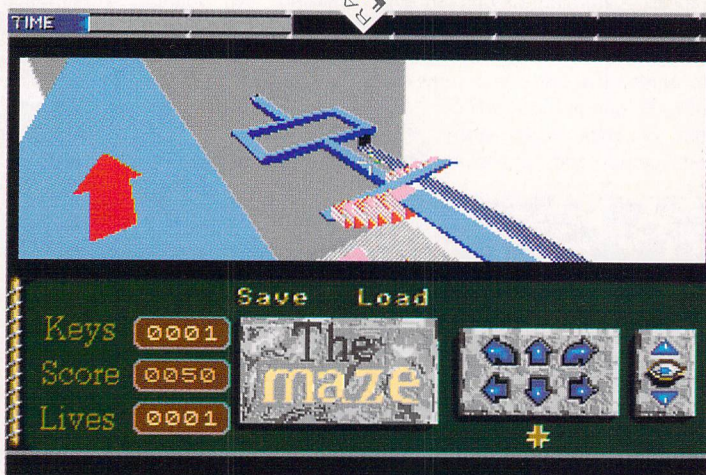
■ A familiar feeling, you should have gone left and you went right. How daft can you get? *Light Cycles* - a version of the game from *Tron* in which you can make interesting mazes out of red and green lines. First practise against your ST, then invite a friend round and humiliate him.

THE MAZE

LAPD - DISK G 217

Based loosely on the *Crystal Maze* TV thing, this has been constructed with Domark's 3DCK and has you wandering about bumping into walls and solving puzzles in a filled vector world. Each level has five rooms with puzzles in; complete one and you collect a key. Collect four keys and you get to reach the next level. It all

leads to the prize. Each puzzle room has a time level - blow it and you lose a life, lose three lives and you start again. The puzzles test your intelligence, dexterity and patience. It's frustrating especially when you figure out how to do something but still can't get it together. There's no strange thin man rushing round making helpful and sarky comments but it's still good fun.



■ One of the nastier-looking rooms from the *Maze*. Each room unveils a new brain-teaser to stir the grey matter into action. Alternatively you could pop out to your mate's and do something else. Life is full of choices, isn't it?

ARTHUR AND THE BRITONS**FLOPPYSHOP – DISK GAM 3336**

It's not easy being king, what with all that wandering around conquering and being shot at. *Arthur and the Britons* puts you in the hot throne in a strategy game with arcade sections thrown in – rather like *Defender of the Crown*. There are four lands to explore and four castles to knock about. You need to keep an eye on your troops,

food and water. When you reach an enemy castle you can opt to attack them, lay siege, try for an alliance or enter an archery tournament. The tournament is an excellent little sub-game – the best bit of it all. Your armies get thrashed regularly and you spend most of the time just trying to keep them alive, let alone bash the opposition. It all looks good but the gameplay needs development.



■ You don't vote for kings – just as well because nobody would stand for the position at the head of an army getting shot at. *Arthur and the Britons* is a mix of a strategy and arcade game, unfortunately excelling at neither.

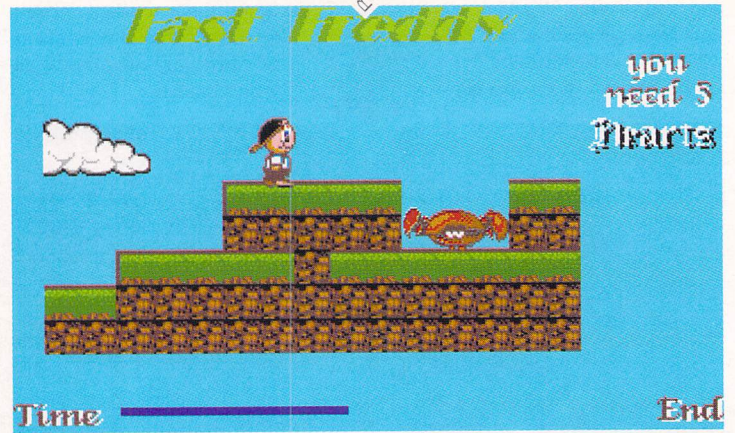
FAST FREDDY**LAPD – DISK G 208**

Cute platform games are all the rage in some circles, big-eyed kids with their hats on backwards running around jumping on things. *Fast Freddy* features one such reprobate. He runs, he jumps, he shoots, he drives you round the bend. Some of the

jumps need pretty exact timing and waggling, and the joystick control is rather unhelpful to say the least.

The graphics are colourful and simplistic and the tune that accompanies it is less than catchy.

Freddy isn't completely unplayable – just bloody unresponsive and difficult to control. Kids these days, eh?



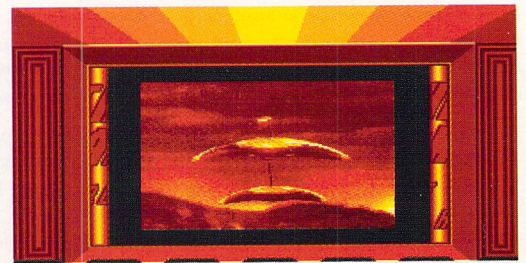
■ Isn't he cute? *Fast Freddy* is on a quest to collect some heart icons and has to negotiate lots of dangerous platforms and creatures. (Remember: you should read this caption aloud in a really sarcastic voice.)

DEMOS**WAR OF THE WORLDS****STATE 808 PDL – DISK ODEM 14**

A coder out there somewhere owns a sampler and a video digitiser. Mix the two together and you get demos like this. The visuals are a series of slides or short clips from the '50s film *The War of the Worlds* with the sounds from the film and that famous album

by that Jeff Wayne chap. The images are quarter screen in shades of red and yellow which makes it look quite pretty, though it's not enough to keep you going for long. There's a reasonable enough fun-factor the first couple of times out then it's into the disk box with it. More fun to produce than watch, methinks.

■ *The War of the Worlds* comes to an ST near you. This is worth a quick spin if you happen to come across the disk, but don't go too far out of your way to find it.

**THE BIRD MAD GIRL SHOW****RIVERDENE PDL – DISK 1030**

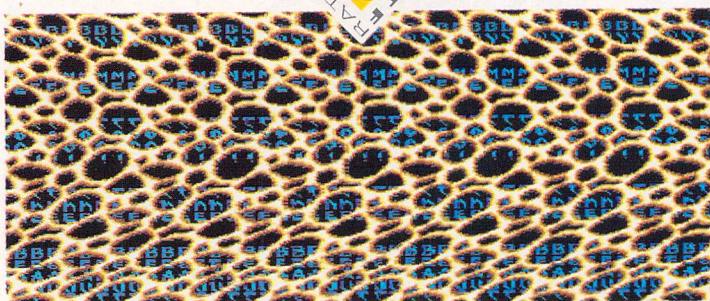
A collection of eight sub demos with all the favourite effects. There's scroll lines of drivel to read and wibbly graphics – nothing to quicken the senses much, though there are some pretty colour raster effects and terrible music. The last demo turns out to be one of those collections of chip music taken from demos and games in

one impressively daunting list – it's likely to impress you if you're the sort of sad soul who absolutely must have every bit of music from *Turrican*. A collection of unimpressive screens making an unimpressive whole. There's some clever coding in there, but it's just all so unoriginal and jaundiced. If you do a screen showing *Spectrum 512* pictures, how about collecting some good ones to show off?

THE SYMIC DEMO**THE SOURCE PD – DISK SAG 154**

Billed as the biggest ever music demo on the ST, the *Symic* demo has an excruciating 147 tunes, each one taken from a demo or game and all played using the ST's Yamaha 2149 programmable sound chip. Unfortunately this is one of the worst pieces of silicon in the machine and only really

suitable for the odd sound effect. To collect so many tunes together is the work of a real optimist. Most are pretty awful, although, to be fair, some of them do a good job with what's available making them passable in the right situation, like accompanying a game or a stunning demo screen. On their own, however, they don't make for easy listening. Music for pleasure without the pleasure.



■ Probably the best bit from the *Bird Mad Girl Show* is this screen. It wobbles and wobbles in an impressively smooth manner, full screen too. Worth a minute or two's gawp if this is the sort of thing you like.



■ Here's the lengthy scrolling list of culprits from the *Symic* demo. The demo also features a scroll line so far down in the bottom border you can't read it. Now that's really clever, don't you think?

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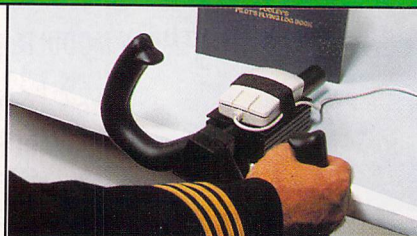
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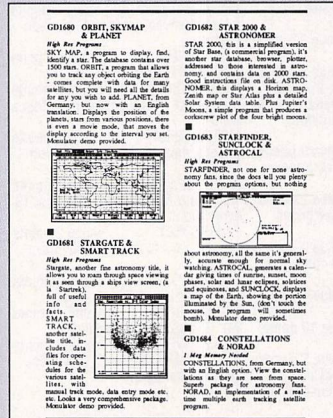
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The ST FORMAT counsellor takes some of this month's programs into group therapy, lets them talk for a bit and then manages to come comes to these conclusions

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Freeze Dried Terminal
You want to get involved with people, albeit at a distance. You still find personal contact a problem though. You should take more risks and get out more.

Light Cycles
You have a near-normal social life, a friend or two and have lost your fear of personal contact. After a period of practice, try four player games, but remember – easy does it.

Address Book
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THE FORMAT PD DIRECTORY

■ Where to go for Public Domain software – demos, games and utilities for around £3 a disk! If you write to any of these libraries for a catalogue, enclose an SAE. ■ Budget games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.

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Average Street Price (excl. VAT)	£569	£699	£699*	£750	£699
Official RRP (excl. VAT)	£945	£1,179	£1,099	£1,099	£1,195
Maximum resolution in dots per inch	300 x 300	300 x 300	300 x 300	300 x 300	400 x 400
Windows 3 Driver @ 400 dpi	-	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	5ppm	6ppm
Straight Paper Path	YES	-	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	YES	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES	YES
Standard RAM	0.5Mb	1Mb	1Mb	1Mb	2Mb
Full A4/300 dpi graphics with standard RAM	-	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	33 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	20 secs	<15 secs
Document Description Language included	-	-	-	-	YES
Flash ROM	-	-	-	-	YES
Upgradable Firmware	-	-	-	-	YES
IC Card Slot	YES	-	-	YES	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	0	8
Resident Bit-Mapped Fonts	11	14	14	16	14
AGFA Intellifont Scalable Font Technology	-	YES	-	-	YES
HP LaserJet III Emulation Included	-	YES	YES	-	YES
EPSON FX Emulation Included	YES	-	YES	-	YES
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Standard Tray Capacity	100	70	100	200	100
Protective cover on standard tray	YES	-	YES	YES	YES
Cost per copy**	1.65p	2.00p	1.71p	1.64p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-131	60-157
Ability to print on OHP Film	YES	YES	YES	YES	YES
Ability to print on card (157gsm - Manual Feed)	YES	-	-	-	YES
Standby - Noise Level	<40dB	31.7dB	<35dB	38 dB	<38dB
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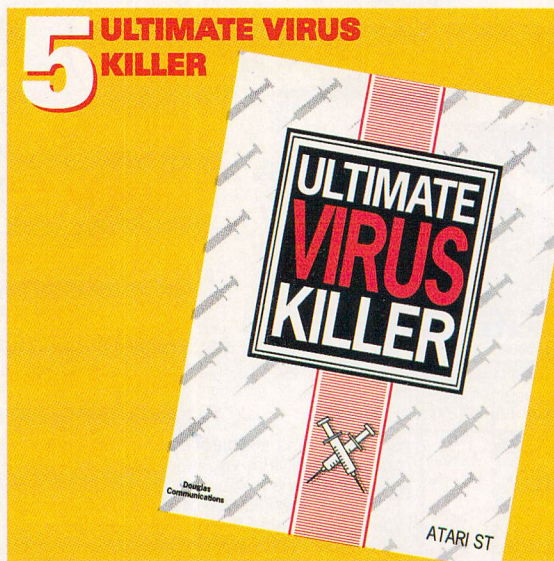
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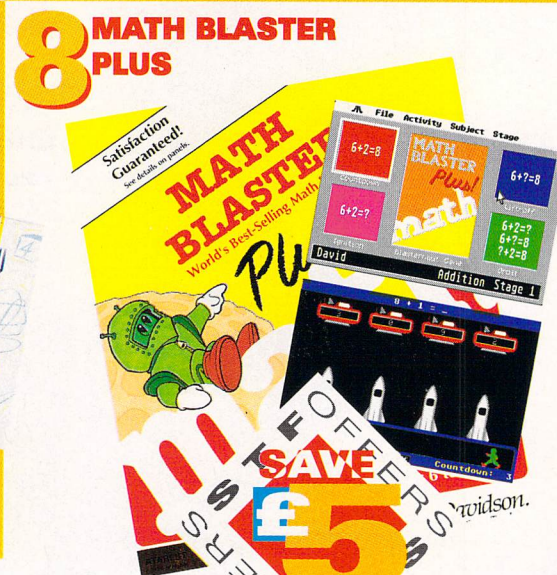
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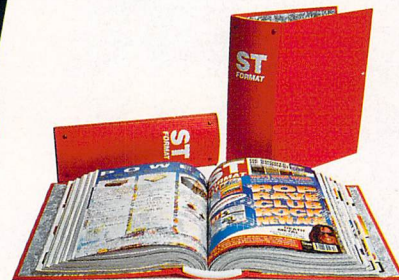
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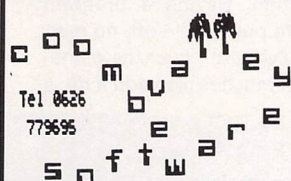
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ON THE PROGRAM

Versatile, flexible, powerful and easy to get to grips with, that's how programmers see themselves anyway. Chris Lloyd takes STOS Basic out of the box for a spin

You love programming, don't you? Hours of fun typing programs and fiddling with parameters – gives you a sort of glow all over, really. Rather like eating that sort of hot oat cereal, in fact. *STOS Basic* gives a particularly warm glow, it's relatively easy and has some extraordinarily powerful commands. Billed as *the* game creator, it has a full range of commands and can be used to produce anything your heart could desire, from databases to sequencers.

Carefully laid plans

If you plan to write a program more than a couple of lines long, then do it on paper first. Don't worry about the code itself yet. Work out the overall structure, how each section works and outline the whole thing, dividing it into logical sections. Any sections or operations that are repeated should be *gosubs*. *Gosubs*, short for go to subroutine, can be called any number of times from anywhere in the program – a huge saving for the old typing fingers.

The most difficult part of any program is getting an original idea or a new angle. One sure way of getting the hump with it all is being too ambitious – keep it reasonably simple at first. Get together some rough graphics and get coding. Write down exactly what all the variables are as you use them – it's really easy to forget what "X" means a couple of days later. Once it's all sussed, it's time to get things down in code. Soon you encounter...

Crawly things

The old story goes that a programmer couldn't get a program to work; he tried everything. Eventually he opened up the machine and, to

his surprise, found that a bug had got inside and shorted something, screwing it all up. Many thanks to "Believe it or not?" for that strange but true story.

There are two types of bug – logical and syntax. Syntax errors are easy enough to cure; you've probably just typed something in incorrectly or have got the parameters mixed up. Finding the little devils can be a pain, especially if you've crammed 400 commands on one line. Logic errors are where the program runs OK, all the commands work; the only problem is that it doesn't do what you wanted it to – perhaps you got the structure wrong or used the commands incorrectly. Time to go back to your plan and the manual to work it out again. Once you have got all the code down and working, it is time for...

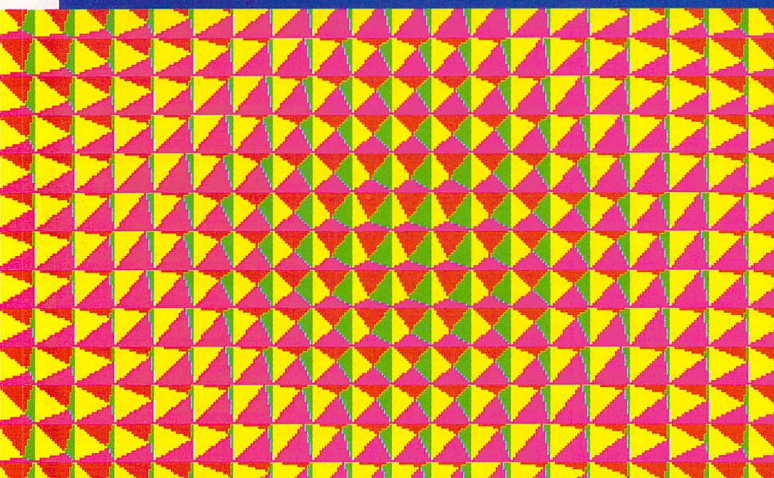
The finishing touches

One of the things that makes a competent program an excellent one is the care taken over the last bit. Test every possible section, try everything, test to destruction. Having a program crash on you is going to put people off, no matter how much care you've taken over the gameplay and graphics. Little touches also add a lot; a

PRETTY QUICK

STOS has some remarkably powerful and simple commands for shoving graphics around the screen. In only a few lines of code and no artistic ability, you can have

snazzy screens wobbling about impressing passers-by. Anthony Porritt from Datrux Software has tapped out these little examples just for your pleasure and delight



■ The speed and flexibility of STOS commands given an airing – this little pattern wobbles beautifully. Everything is done in real-time too.

```
10 curs off : hide on : ↵
    key off : mode 0 : ↵
    autoback off
15 X=160 : Y=104 : ↵
    A=1 : B=-2
20 palette $0,$700,$770,↵
    $070,$707
25 def scroll 1,0,96 ↵
    to 176,112,-16,0
30 def scroll 2,160,96 ↵
    to 320,112,16,0
35 def scroll 3,0,0 ↵
    to 320,112,0,-16
40 def scroll 4,0,96 ↵
    to 320,200,0,16
45 X=X+A : Y=Y+B
50 if X=160 or X=175 ↵
    then A=-A
55 if Y=96 or Y=110 then B=-B
60 ink 1 : polygon 160,96 ↵
    to X,Y to 175,96
65 ink 2 : polygon 160,96 ↵
    to X,Y to 160,111
70 ink 3 : polygon 175,96 ↵
    to X,Y to 175,111
75 ink 4 : polygon 160,111 ↵
    to X,Y to 175,111
80 scroll 1 : scroll 2 : ↵
```

```
scroll 3 : scroll 4
85 goto 45
```

The 16 pixel square pattern is drawn in the middle of the screen then scrolled in four directions at once. It's all fast enough to give a smooth ripple-effect animation.

```
10 curs off : hide on : key.↵
    off : mode 0 : update off
15 AM=min(free/32128,14)+1
20 for L=2 to AM : reserve ↵
    as screen,L : cls L : next L
25 rem The palette for your.↵
    sprite here
30 SC=2 : logic=back
35 inc SC : if SC=AM ↵
    then SC=2
40 sprite 1,x mouse,y ↵
    mouse,1 : update : wait vbl
45 physic=SC : screen swap
50 goto 35
```

Line 15 works out how much memory you have to store screens up to a maximum of 14. Put the correct palette for your sprite into line 25. Run and wiggle the

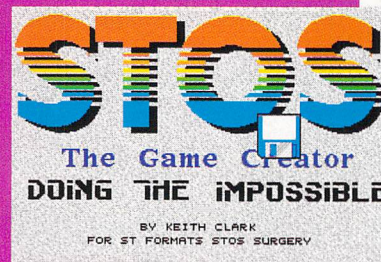
BIG AND SMOOTH

Keith Clark sent us this number to create fast and very smooth sprites. It uses pre-shifted graphics, that is, the sprite is drawn on a screen in several positions ready to be used. Draw a 32x32 sprite and a background screen, put the screen in memory bank 11 and away you go.

```
10 key off : mode 0 : ↵
    hide : curs off
```

```
20 reserve as screen 10
30 rem Put your palette here
40 logic=back : for Z=0 to 3
50   sprite 1,16+(I*80)+1*4,↵
    10,1 : update
60 put sprite (1) : next Z
70 screen copy logic to 10 :↵
    logic=physic
80 screen copy 11 to ↵
    physic : screen copy 11
to back
90 logic=back
100 inc Q : Y=85*sin↵
    (10*Q/180.0)+74
```

```
110 screen copy 11,X,Y,X+80,↵
    Y+52 to logic,X,Y
120 screen$(logic,X,Y)=↵
    screen$(10,PX*80,0 to↵
    PX*80+80,48)
130 if DR=0 then inc PX : ↵
    if PX>=4 then PX=0 :↵
    XX=X+16 : PY=0
140 if DR=1 then dec PX :↵
    if PX<0 then PX=3 :↵
    X=X-16 : PY=0
150 screen swap : wait vbl :
    goto 100
```



■ Sprites are easy; smooth and fast sprites not so. try this clever method of ironing all the wrinkles out of a sprite's movement.

high-score table you can save, animated introductions, a few whizzo samples dotted about – little polishes like this can make your final efforts sparkle. Now sit back and wait for the adoring fans to flock round your house – er, not. After all, you've spent all those sleepless nights tracking down bugs, optimising the main control loop and wrestling with logical screen addresses for fun, didn't you?

Stringy screens

Using the sprite commands to shift graphics about works well enough, but when there's a lot going on or the sprites are on the large size, things get difficult. If you want smooth and fast sections moving about or want blocks larger than 64 pixels square, the best way is via the screen copy and screen\$ commands. You can load a section of a screen into a string and plonk it down again easily. The block can be any size – right up to a full screen. These could be placed into an array to make creating and displaying them easier. Screens can be created with the

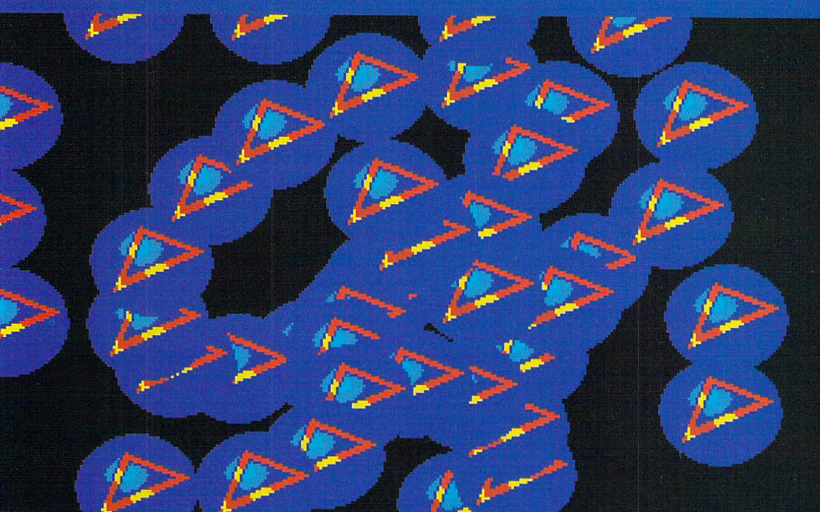
range of graphics commands and then saved as strings – there's no need to use up valuable memory banks either.



■ The example game Zoltar uses the screen copy command to move the huge alien ship on Level Five about, copying it from a memory bank straight onto the screen.

Infinite dimensions

If you want to store a variable, you give it a name and assign your value – easy. Say the variable "X" holds your wages and the variable "Y" your tax. Any time you want to alter either of them, you just assign new values or adjust them. Say you get that overdue payrise, you could do $X=X+500$ – no problem if you only have a few variables to deal with. Now imagine dealing with a few thousand people's wages. You'd have to initiate each variable separately. Hence dimensioned arrays were born. A simple command like `dim WAGES(1000)` sets up 1,000 variables. You address each by putting the number in brackets after the variable name, `print WAGES(37)` prints the contents of the 37th element in the variable WAGES. The arrays can have more than one dimension, WAGES (1000,10,) has two dimensions. Each of the 1,000 original elements now has ten elements of its own, giving 10,000 variables in all. There are no limits to the number of dimensions, but each one is limited to 65,535 elements. **stf**

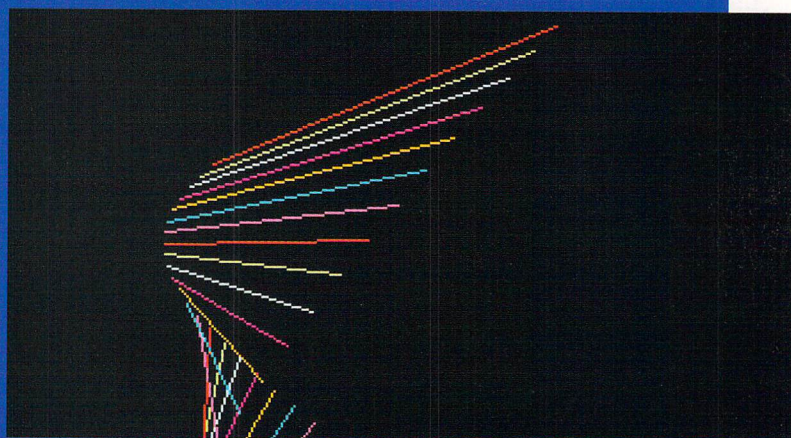


■ A favourite programming trick, the old infinite number of sprites routine. It's a cheat, of course. It uses screen-flipping; there's only one sprite on screen at once. Use `SPRITE.ACB` to draw yourself a sprite and type this in.

mouse around – it leaves a trail of sprites behind. Keep moving the mouse about and it adds sprites until you've got millions of them whizzing about all over the shop.

```
10 curs off : hide on : ↵
    key off : mode 0
20 palette $0,$11,$577,$377,↵
    $177,$375,$573,$771,$750,↵
    $730,$700,$702,$703,$705,↵
```

```
$727,$747
30 def scroll 1,64,16 ↵
    to 256,200,0,8
40 logic=back : A=0 : C=1
50 X1=160+sin(A/21.6)*95
60 X2=160+sin(A/16.6)*95
70 Y1=58+cos(A/22.6)*40
80 Y2=58+cos(A/12.6)*40
90 ink C : C=(C mod 14)+2
100 draw X1,Y1 TO X2,Y2
110 scroll 1 : screen swap
120 wait vbl : inc A
130 goto 50
```



■ These lines flow backwards and forwards in a most pleasing wibbly way. Assuming you like that sort of thing. A spot of maths produces an oscillating line and the scroll command has the effect of moving everything down the screen, giving the illusion of a flowing series of lines.

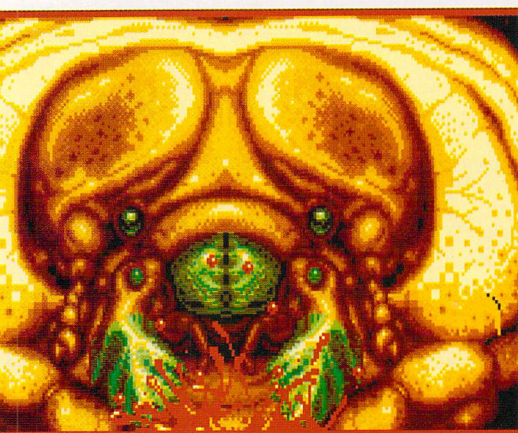
■ *Fire and Ice* was deemed to be "radical" with its sizzling gameplay, pretty graphics and the ability to actually slide when you're on the ice.



■ *Pushover*: create rows of blocks, then, er, push 'em over. Also radical for its new approach to advertising.

THAT WAS THE

As 1992 passes into the golden years file, Andy Hutchinson drinks far too much sherry, drapes one arm drunkenly around anyone who's willing to listen, dribbles slightly from the corner of his mouth, gets a nasty stain on his new sweater and then recounts this bawdy tale of love, avarice, greed, and a computer called the ST



■ Andy Hutchinson won the chance of an all-over body and face replenishment and this happened to him.

Oh, how the years flit by. Was it really seven years ago that Sam Tramiel proudly ushered his 16-bit ST out of the doors of the development lab and into the homes of millions? Well, actually yes, it was. 1992 has seen many changes in the cosy world of Atari. But how many do you remember?

Two in, one out, one undecided

There were several new lumps of plastic released by Atari in 1992. The Mega STe was released at the start of the year, though this wonderful 16MHz machine has sold in underwhelming numbers. The next month Atari surprised everyone by releasing their portable ST, the ST Book. This nifty piece of kit costs £1,300. Atari announced they'd be showing the computer for the first time at the 16-bit show and reckoned they were going to "put on the razz." Well, we went to that show and, if a dull stand and a few leaflets is putting on the "razz," then Lord help us.

In March everyone was talking about a hardware add-on. Dover Research had come up with a board so you could display 16 million colours at a resolution of 1,024 x 768 pixels. Whether or not they got round to releasing that card is open to question. But even that palette doesn't seem too brilliant in the light of more recent developments.

Then it all went a bit squiffy. Atari had been developing a keyboard-less machine called STylus which was supposedly able to read handwriting. It did this by using some very sophisticated software that make use of brain-like neural networks. In April we revealed that, unfortunately, the software hadn't been up to the job and STylus was never to be released.

By May more details were beginning to emerge about this new Atari machine. We reckoned that it'd cost about £600 and come with a 68030 processor – we were right on one count anyway. We also correctly predicted that it would have a quarter of a million colours and

with MultiTOS as standard. Atari also said they didn't expect the machine to appear before '93. In June FSM G-DOS was given a launch date of July '92. This meant that standard STs could cope with scaleable font technology. All a bit dull, but perhaps slightly gripping if you're into DTP in a big way.

Halfway and still no Falcon

Life wasn't much more exciting in July either. Everyone was off on their holidays and generally nipping out to riverside pubs for a spot of Pimms and ploughman's, so only a few printers were released. Oh and *Calamus* (mightily expensive) SL was in the shops.

Fresh and relaxed everyone got back to work for August. Atari were obviously keen to stay inside because they came up with the idea of bunging a digital signal processing chip inside their Falcon machine. We were, in fact, the first people to bring you that piece of information. Since there was a much clearer view of the specification of Falcon by then, we got in touch with software and hardware houses and encountered an enormous amount of apathy from all but the most devoted Atari fans. The software world was still in paroxysms of delight over the huge console take off and nobody with a decent computer (QWERTY keyboard, what's that?) was going to ruin the party. God forbid you might get some use out of your computer other than giving your right arm some serious muscles. Ahem. Since then various developers have announced their support for the machine, but it would be interesting to know what sort of take up there'd have been if Atari had left development to third party developers.

With everyone back at school and the open-air swimming pools locking up for the winter, the Falcon situation became a lot clearer. Bob Gleadow revealed that Falcon030 was merely the start of a new family of computers. We revealed that that family was likely to include a CD-Falcon, something which becomes

TEN HIGHLIGHTS OF 1992

1. Launch of the Falcon
2. Launch of the Commodore A1200 – about the only thing it can do that Falcon can't is display a static image in a slightly higher wobble-vision resolution. Have a look at the news on page 8 to see that there are an endless number of applications that a basic Falcon's capable of which the A1200 couldn't begin to even ponder about carrying out.
3. The rather incredibly brilliant *Sensible Soccer*.
4. The Future Entertainment Show. What a blast, what a show, what a crowd. Well done if you turned up. Make it next year if you didn't.
5. US Gold and Dimension Creative Designs decided to release the wicked *Legends of Valour* on the ST. Hurrah for USG! And hurrah for Kev Bulmer!
6. D2D became the first company to develop a program for the Falcon, one which no other home computer can emulate, namely recording to hard drive over four channels for remixing.
7. AVR's rather excellent 16-bit sampler – real power for the raving generation.
8. *Cubase 3* – confirmation that there is only one MIDI computer.
9. The ICD Link – at last real SCSI for the first time for all ST owners.
10. *Baywatch* – or is it *Babe-watch* with the stunning Erika Eleniak?

■ Another
World is an
experience
not to be
missed with
its brilliant
effects - its
animation
sequences,
for starters.



THAT WAS
1992

■ *Ishar, Legend of the Fortress* won itself a **FORMAT Gold** with its excellent sound and graphics - the best role playing game for ages.

YEAR THAT WAS



■ *Lure of the Temptress* brought **Virtual Theatre** to your ST for the first time.

more and more likely all the time. Then (shock, horror) Atari actually launched the Falcon.

By October the machine had been shown in Dusseldorf and everyone was surprised to discover that all those things people had been saying about Falcon were right - it really is a blindingly brilliant piece of kit. The initial launch price was known to be £499 and Atari reckoned they'd have 10,000 of them in the shops before Christmas ('92, that is). What's more, we knew that there was some great software coming out - we'd seen it running and everything.

In November, everything was relatively quiet on the Falcon front, but all the software houses were gearing up for Christmas by lining up their heavyweight games. D2D Systems announced an extremely interesting looking package for Falcon, namely a hard disk recording program. With this £200 package you can record music onto a hard drive and then remix it as you wish. Previously this kind of application required £2,000 worth of hardware. Their program is software alone and enables anyone with a Falcon to record four-track music at better than CD quality. Good, eh? And this was just the start. Tons of innovative stuff is on the way.

Which brings us along quite neatly to December. The Falcon arrived in the high street shops and Atari geared itself up for advertising the thing in '93. What's more, we'd uncovered news of an even newer Atari; a 68040 based computer. We reported that this had been developed at the same time as Falcon030, which is hardly surprising really, given the nature of development. Falcon040 and indeed the £399 version of Falcon030 will no doubt occupy many column-inches of news page space in '93.

The games people play

There have been some absolutely brilliant games released during '92. Having said that, there have also been some absolute dogs, but hey, let's not harp on about them. Not yet anyway. All things being clichéd, the ST market did a lot of maturing during '92, all of which means that fewer, better games came out.

The year kicked off pretty well with the release of *Populous 2*, the brilliant god game which we gave an enormous 95%. One year

later and certain members of the team still enjoy letting some plague loose on a village or dropping the odd earthquake down a peasant's trousers. In the same month *Silent Service 2* just missed earning itself a **FORMAT Gold**. In the preview section of the magazine, the big game was something called *Epic* - can't think what happened to that one.

With the weather turning from bad to blizzard, the software houses made sure that if you were snowed in, you had plenty to do on your ST. *James Pond 2*, the brilliant platform game was awarded 86% and quickly replaced work in the STF hut, while those more cerebral members of the team were having a lot of fun with *Realms*, a Tolkeinesque god game which got a super-smashing 87%.

It wasn't just the economic climate which took a turn for the worse in March, because MicroProse decided that they wouldn't be releasing *Civilisation* on the ST. Thanks to an enormous amount of lobbying from both **ST FORMAT** and you we managed to persuade MicroProse otherwise later on in the year. Actually out on the shelves in computer shops were the brilliant duo: *Mercenary 3* and *Deuteros*, getting 90% and 83% respectively. Both of those are terribly large, cerebral games, but the '93 **STF** crew ask: who's still playing them?

Understandably, there wasn't a lot of preview stuff happening during April, definitely the most tedious month of the year. In fact the single item of games news was about the forthcoming *Hot Rubber* from Palace, complete with dubious picture of woman and mammary glands pouting "sexily" at the camera. Needless to say, we weren't the only magazine to run the picture or justify it by saying how sexist that kind of photo it is. It was beasts, not breasts that were in *Another World*, *Storm Master* and *Shadowlands*, the three good games on release that month. Best of the crop? Well, in retrospect we'd have to say *Shadowlands*, because *Another World* holds little long term interest.

Things were livening up a bit in May, with news that Gremlin were going to release a game of *Plan 9 From Outer Space*. Nobody held their breath waiting for that one, which is just as well really. Being reviewed that month were the brilliant *Titus the Fox* and the gob-smacking *Robocop 3*. The latter's definitely a belting game, fully deserving of the 94% it got then. Our favourite bit from the game were those radical, bottom-wobbling samples which Ocean had squeezed into the game. It certainly gets our vote as one of (if not the) best film licence ever. It didn't end there though, the radical *Knights of the Sky* was impressing the hell out of everyone with its superb dog-fighting simulations.

By June, Sam Tramiel reckoned that we'd see some STE only games. **ST FORMAT** say "Ha! Where are they then?" Good old Atari, true

to their word as ever.

You probably don't care anyway, since *Lure of the Temptress* and *Pacific Islands* were leaving the shop shelves in rather large numbers, largely, no doubt, because of the 92% and 90% scores they earned here.

All this and *Rainbow Islands 2*

With August we had some good news about the ST games scene, *Civilisation* would be appearing on the ST after all. Hurrah! No less than four games got **FORMAT Golds** in that issue of **STF**: *Epic*, *Parasol Stars*, *Wizkid* and *Ishar*. The ones we're still playing? All four actually, though in the end it's *Wizkid* which gets the quick-satisfying-blast award.

In September we revealed that *Elite 2* was on the way, along with *Blade of Destiny*, an RPG from US Gold. Whatever happened to that? Oh and *Legends of Valour* too. The only game on release that month that was any cop was *Fire and Ice* Andy Braybrook's brilliant platform game starring Cool Coyote.

Come October and *Sensible Soccer* was having a **FORMAT Gold** awarded to it. Its depth and great playability earned it the award and three months on, it's still the cause of some vicious rucks in the office. *Pushover* was also raising a few eyebrows, not least because it's the first game to have built-in advertising.

In November we previewed the games that'd be vying for your Christmas gift tokens. We identified *Lemmings 2*, *Lethal Weapon* and *Street Fighter 2* as being the biggies.

Finally '92 jogged wheezing into the terminus and left us with just one **FORMAT Gold**, the compilation pack *Magic Worlds*. On the preview front we were wondering who had it in for the ST. We had very little news of forthcoming games for the ST, mainly because everyone was sorting things out for Christmas. **stf**

Thought
for the year:
inaccessible
joystick
ports

RUMOURS

1. Virtual Reality headset bundled with Atari's Jaguar console?
2. The CD-Falcon all-in-one unit?
3. The Mega STE?
4. Atari planning to advertise their hardware?
5. Charles and Diana's marriage is a sham?
6. Atari's *Steel Talons* on the STE?
7. Panther console?
8. Atari have got hundreds of Falcon development machines out to teams?
9. The Atari helpline?
10. The government may not have a coherent economic or social policy for this country?

LIFE, THE UNIVERSE AND EVERYTHING

OH NO! MORE LEMMINGS REVISITED

This is the corner of James The Moran, so he calls himself. You might think that sounds a tad pre-cocious, but there you go - he has opinions on ST games, he has an incredible cheek and he can string sentences together. And this month he's writing about Oh No! More Lemmings

There are some things in the world that are peaceful and serene - the placid, translucent ripples of water on a deep, dark lake, the cool unclouded summer sky, and swallows gently drifting home for the spring after a long, hard winter. *Lemmings* isn't one of them.

You see, in *Lemmings* you have the gargantuan task of lead-

ing a group of brain-dead, suicidal maniacs (no, not the *ST FORMAT* review team) across 120 different barren wildernesses to "home," a place far, far away from the starting point, within a certain time limit - a bit like orienteering but without khaki rucksacks. To help you in your thankless role, the lemmings can perform a set of eight painful manoeuvres including digging tunnels, building bridges and the curious talent of being able to totally annihilate themselves. An odd new game concept that sold in the thousands, winning a host of awards along the way.

Thus was *Lemmings*, but times change, only 120 levels! Pah! Kids stuff! People of today need a much greater challenge, so from the grimy cupboards of Psygnosis sneaked out another

110 levels for the tiny buggers to rampage through.

Oh no! More Lemmings has the same hard core, manic theme as the original, same characters, same basic plot and that sort of stuff, but it is different in loads of ways. The graphics for each level are humungously different, bringing a whole new collection of Lemming mashers, graters and blenders. Also the difficulty level names have changed, as have the congratulation and commiseration comments after each level. Sadly, the sound effects have been altered so that no more do we hear a jolly explosion noise when one of our chums pops his clogs, instead a rather sad dripping sound. It's pathetic, actually.

On the whole the game is still ace, very addictive and still maintains the novelty value that made

it such a success in the first place. The difficulty of the levels is balanced well and the sound isn't really that bad.

You can buy this rather delectable game either as a data disk but you need the original to run it (come on - who ain't got the original *Lemmings*?) or as a standalone version. Unsurprisingly, the standalone version stands alone so you can run it without the original - handy. The price of the standalone is reasonable at £25.99, but the data disk is a whopping £19.99 - far too much in my book.

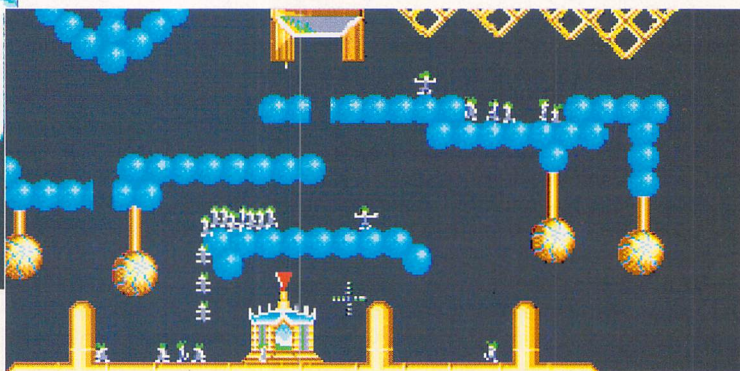
If you don't like *Lemmings* however, you are unlikely to be completely enraptured by this, though from an impartial game player's point of view, it looks well smart.

Moran Rating: 89%



■ Like this insubstantial pageant faded, leave not a rack behind. We are such stuff as dreams are made on, and our little life is rounded with a sleep.

■ The Lemmings rushed into the mountain hut and Mulligan and Arbuthnot got first dibs on the Jacuzzi. Samuel consoled himself with a lump of coal.



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TEN THINGS TO DO IN A SCIENCE LAB

1. Wire those sad guppies from the school fish tank into the national grid.
2. Project a hologram of the angel of death into Saddam Hussein's living room, video what happens and send it to You've Been Framed.
3. Service a Lada Riva and recharge the battery by connecting it to the hamster's wheel.
4. Bring a Welsh cod fillet back to life.
5. Train a dog to eat at the sound of a bell – should get rid of the Jehovah's witnesses.
6. Plug your ST into the computer controlling the lab laser and play Operation Thunderbolt with those friendly men from the SAS.
7. Put your local (dis)honest car salesman on a lie detector and asked him if he has ever clocked a mileometer.
8. Make a techno video.
9. Recycle a car bumper into, well, another car bumper.
10. Stop the rotation of the Earth, go outside, proclaim yourself master of the entire universe, go back inside and start it again. This requires only a small Meccano set and semi-divine powers.

Yes well, thank you to James O'Brien for that little lot – you're obviously one prawn short of a barbie. Now, does anyone else have any top tens they'd like to share with us?

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DREAM TEAM

In issue 39 we ran a compo asking for the best team possible to play with in Sensible Soccer. There were many brilliant answers, but the supreme award goes to Jason Davies of Macclesfield in Cheshire, who sent us this personal squad:

1. Elvis Presley because I saw him playing in goal for Liverpool just last week.
2. David Mellor because of his inventiveness in a football strip and also because he needs the work.
3. Jeff Minter because he's mad.
4. Vinny Jones because of his skill, ball control and delicate first time touch.
5. Madonna – the one in bed,

that is, and not the cheating cry baby of restricted height.

6. Graham Taylor because of his technical brilliance, knowledge and understanding of the game or er, not.
7. God (Captain) because he moves in mysterious ways which never did Bryan Robson any harm.
8. Gazza because he's fat.
9. Louis Pasteur because you've got to experiment, haven't you... (please see Mr Taylor for details)
10. Ebenezer Goode because of his obvious love of the rave scene, which is very important in the modern game.
11. Benny Hill because of his lightning speed and massive stamina as witnessed during the closing credits of all his TV shows. Also because he's dead...

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OBJECTS *Desire*

**They're back!
The green-
haired suicidal
heroes of
Lemmings are all
set to sweep the
board in '93 with
their greatest
adventure yet.
But can you
save 12 tribes of
them from a land
on the verge of
destruction?**

Lemmings 2 - Psygnosis

Without a doubt the most eagerly-anticipated game of recent times, *Lemmings 2*, was

unleashed to an adoring public at the Future Entertainment Show in early November.

The lemmings from the original game have now set up home on an island. Their magic talisman has been divided into 12 pieces while they have split into 12 distinct tribes, which include Space, Circus, Beach and Outdoor Lemmings. However, the Great Darkness is descending upon their land and they must reunite the pieces of the talisman to escape their fate.

Although the gameplay is virtually identical to the original *Lemmings*, the diversity of the tribes means the lemmings now have 40 different skills between them. For example, Circus Lemmings can climb into cannons and fire themselves into the air like human-cannonballs. Other lemmings can sing, windsurf, float about on balloons and hang-gliders or shoot arrows.

Although it was originally due for release before Christmas, *Lemmings 2* is now coming out in mid-February, priced at £29.99. Get it before you regret it. **stf**



■ Just when you thought it was safe to go back to the seaside, these Beach Bums show up.



■ Mediaeval lemmings in the classic "human water-fall" mode.

■ Quick! Somebody get a pin! The rodents in *Lemmings 2* have changed their brollies for wind-assisted balloons.



■ Use the catapult to fling your charges into the air. Beats walking.



■ "Clam, Clam, you know where I am..." "Oh, not Grease again. That's it, I can't stand it any more. Goodbye cruel world, goodbye... argh!"

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